

# STERILIZATION CONTROL DEVICE PLAN APPROVAL APPLICATION

B. BRAUN MEDICAL INC. – ALLENTOWN, PA

NOVEMBER 2019

Submitted by:



**B. Braun Medical Inc.**  
Allentown Facility  
901 Marcon Blvd.  
Allentown, PA 18109

Submitted to:



Pennsylvania Department of Environmental Protection  
Bureau of Air Quality  
Northeast Regional Office  
2 Public Square  
Wilkes-Barre, PA 18711-0790



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## **1. INTRODUCTION**

B. Braun Medical Inc. (B. Braun) operates a medical instrument apparatus manufacturing facility located at 901 Marcon Blvd. in Allentown, Pennsylvania (Facility). The location of the site is shown in Figure 1-1 on a section of the United States Geological Survey (USGS) quadrangle map for the area. The Facility currently operates under Pennsylvania Department of Environmental Protection (PADEP) Title V Operating Permit (TVOP) No. 39-00055, and PADEP is currently reviewing the application submitted by B. Braun to convert the current Facility TVOP to a State Only Operating Permit (SOOP). Per communication with PADEP on November 15, 2019, B. Braun is considered a State Only, non-Title V Facility.

B. Braun submits this Plan Approval Application (PAA) to request authorization to voluntarily construct and operate enhanced emissions control equipment to further reduce emissions associated with B. Braun's medical instrument apparatus sterilization operations. The existing emission control equipment ensures compliance with all regulatory and permit-based emission control standards applicable to the Facility; therefore, B. Braun is proposing through this application to voluntarily achieve additional emission reductions, expected to further reduce emissions to levels below that required by any applicable requirements. The enhanced emission control equipment would consist of a new, higher efficiency control device consisting of a catalytic oxidizer and peak shaver. The proposed control device is discussed in detail in Section 2. Subject to PADEP's review and approval of this PAA, B. Braun is prepared to commence construction of the proposed enhanced emission control equipment during January 2020.

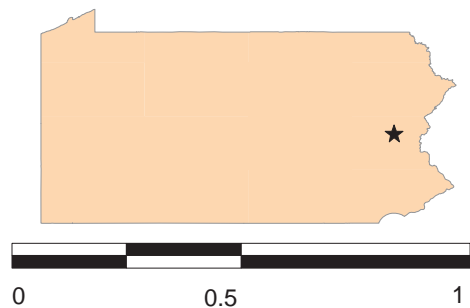
### **1.1 APPLICATION ORGANIZATION**

This PAA has been prepared to provide PADEP with the information necessary to review and approve the project proposed herein and is organized in the following manner:

- **Section 1 – Introduction:** Provides an overview of the project and outlines the remainder of the application.
- **Section 2 – Project Description:** Provides a general description of the project and relevant emissions units.



approximate quadrangle location



**B. Braun Medical Inc.  
Allentown, Pennsylvania**

**Figure 1-1  
Facility Location Map**

Based on USGS 1:24,000 topographical map for Catasauqua, PA, 2001.



- **Section 3 – Emissions Inventory**: Describes the approach to calculating potential emissions following installation of the proposed control device.
- **Section 4 – Regulatory Analysis**: Addresses Federal and State regulations that are potentially applicable to the project.

The appendices to this application are organized as follows:

- **Appendix A** – PADEP Application Forms
- **Appendix B** – Emissions Inventory
- **Appendix C** – Control Device Specification Sheet
- **Appendix D** – Municipal Notification Letters

## **2. PROJECT DESCRIPTION**

B. Braun proposes to install and operate a new control device manufactured by Anguil Environmental Systems, Inc. (Anguil). The “Anguil System” will control emissions from the existing eight Sterilizers and Aeration Room (Source IDs 101 – 108 and 110, collectively known as “Source Group 1” or “sterilization process”). The proposed Anguil System control device will replace the existing Catalytic Oxidizer (Control Device ID C001) and Wet Scrubber Deoxx Unit (Control Device ID C002). The purpose of the control device replacement is to voluntarily achieve further reductions of ethylene oxide (EtO) emissions from the sterilization process. The resulting EtO emissions levels are expected to be less than applicable regulatory or permit-based standards, including the original Best Available Technology (BAT) determination for the sources reflected in the existing permit. The proposed control device and the affected emissions units are discussed below.

### **2.1 STERILIZATION PROCESS**

B. Braun manufactures medical instruments for multiple health care applications. These instruments must be properly sterilized to ensure the safety of patients and health care providers, as well as to satisfy specific, rigorous standards imposed by the United States Food and Drug Administration (FDA). To achieve these critical objectives, B. Braun implements appropriate procedures to achieve proper sterilization of the medical instruments in the context of the manufacturing process at the Facility.

The sterilization process utilizes EtO within the eight sterilization chambers. From the sterilization chambers, the sterilized instruments are taken to the Aeration Room where residual EtO is released from the sterilized instruments and controlled. EtO emissions from the eight existing sterilization units are currently controlled by the existing permitted Wet Scrubber Deoxx Unit (Control Device ID C002).<sup>1</sup> EtO emissions from the Aeration Room are currently controlled by the Catalytic

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<sup>1</sup> EtO may also be released from the “back vents” of the sterilization units. These emissions are expressly exempt from control under federal regulatory standards promulgated for this source category, and not otherwise required to be controlled by the Facility’s existing air quality permits issued by PADEP. Nonetheless, in 2019 B. Braun voluntarily installed and operates a control device for these emissions, as reflected in Request for Determination No. 7956 (RFD). Following issuance of this proposed plan approval for the Anguil System, B. Braun requests that the



Oxidizer (Control Device ID C001), which utilizes a small 2.8 million British thermal units per hour (MMBtu/hr) natural gas-fired burner. A process flow diagram for the existing sterilization process is provided in Figure 2-1.

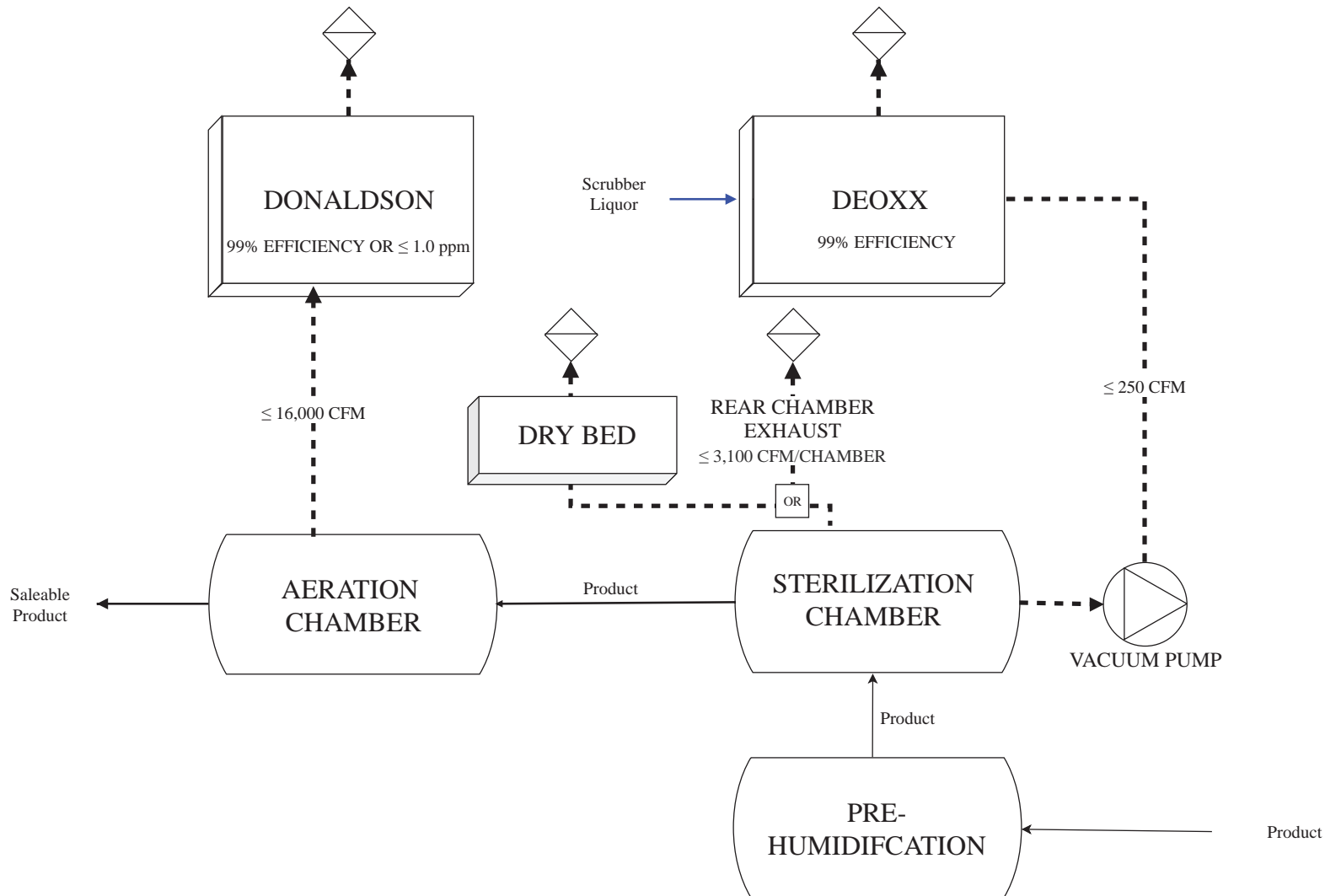
This PAA requests authorization to replace the existing Wet Scrubber Deoxx (Control Device ID C002) and Catalytic Oxidizer (Control Device ID C001) with the Anguil System. Anguil identifies an expected control efficiency for the proposed system as greater than 99%.

Exhaust gases from the existing sterilization process will be routed to the proposed Anguil System. The Anguil System consists of a peak shaver and catalytic oxidizer. The peak shaver works to normalize the concentration of EtO sent to the catalytic oxidizer. The peak shaver recirculates water from a holding tank over a packed scrubber bed. The sterilizer exhaust runs countercurrent to the water and the EtO is absorbed into the water. After the sterilization cycle is finished, the EtO is stripped from the water via a fresh air source at a controlled rate and directed to the catalytic oxidizer. In the exhaust stream to the catalytic oxidizer, the peak shaver exhaust would mix with Aeration Room air in the interconnecting ductwork. Based on information provided by Anguil, the Anguil System is expected to achieve greater than 99% emissions reduction or, for a lower concentration inlet stream, an exhaust concentration below 1 part per million by volume (ppmv). B. Braun will determine the specific emissions control efficiency via stack testing upon installation. The catalytic oxidizer component of the Anguil System utilizes a small (3.0 MMBtu/hr) natural gas-fired burner. A process flow diagram for the proposed modifications to the Source Group 1 control devices is provided in Figure 2-2.

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Miscellaneous Section of the SOOP identify the optional operation of this Dry Bed Unit control device for EtO emissions from the sterilization unit back vents. This permit reference should reflect the availability of the Dry Bed Unit as an additional, voluntary EtO control device that may further reduce actual EtO emissions. As specifically governed by the RFD, B. Braun expressly notes that it does not rely on the voluntary Dry Bed Unit control device for any compliance purposes or for emissions reduction credits, nor in the determination of the Facility's Potential To Emit (PTE) EtO relative to any regulatory applicability.

# Process Flow Diagram Existing Sterilization Process B. Braun Medical Inc. - Allentown, PA



**LEGEND:**

- PRIMARY PRODUCT
- - - - - GAS / VAPOR
- WATER / PROCESS LIQUID
- ◇ EMISSION POINT

**FIGURE 2-1**

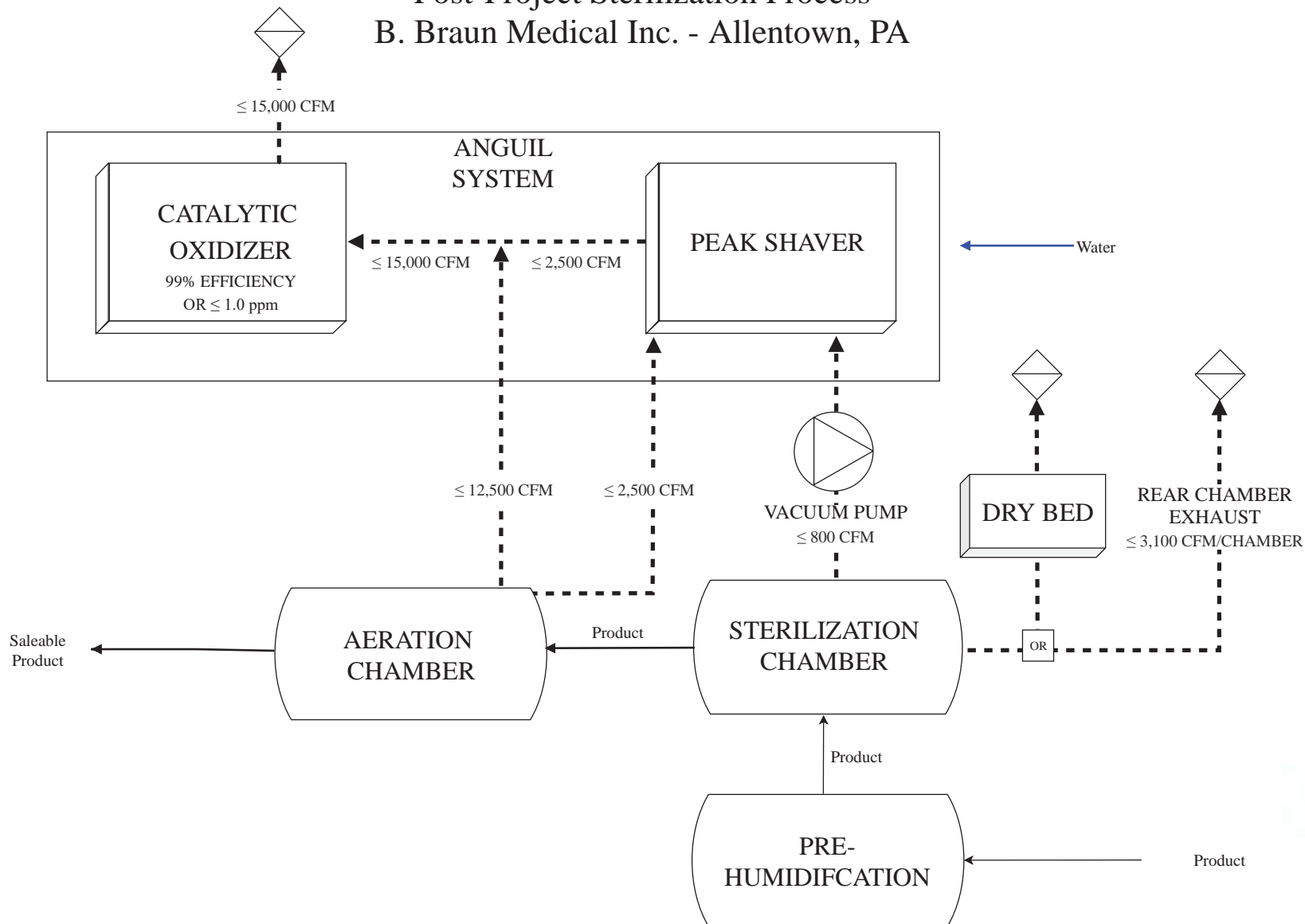
**Existing Process Flow Diagram**



**B. Braun Medical Inc.**  
Allentown, Pennsylvania

REVISION NO.: 1	DRAWING FILE:
DATE: 10/16/19	DRAWN BY: J. Martin

# Process Flow Diagram Post-Project Sterilization Process B. Braun Medical Inc. - Allentown, PA



**LEGEND:**

- PRIMARY PRODUCT
- GAS / VAPOR
- WATER / PROCESS LIQUID
- EMISSION POINT

FIGURE 2-2

Post-Project  
Process Flow Diagram



B. Braun Medical Inc.  
Allentown, Pennsylvania

REVISION NO.: 1	DRAWING FILE:
DATE: 10/16/19	DRAWN BY: J. Martin

### **3. EMISSIONS INVENTORY**

EtO is the only pollutant emitted from the sterilization process. EtO is classified as a volatile organic compound (VOC) and a hazardous air pollutant (HAP).

B. Braun determined the PTE EtO emissions from the sterilization process based on the maximum potential throughput of EtO across the sterilization process. As displayed in Tables 1 and 2 of Appendix B, maximum potential EtO throughput is based upon the total sterilization capacity of 77 pallets per batch, seven pounds of EtO consumed per pallet, two batches of sterilization per day, and 365 days of operation per year. The Anguil unit is expected to achieve an emissions reduction of greater than 99% based on information provided by Anguil. B. Braun will determine the specific emissions control efficiency via stack testing upon installation. For purposes of PTE, B. Braun conservatively assumed the Anguil unit will achieve 99% reduction of EtO from the sterilization process.

As displayed in Table 4 of Appendix B, the proposed project will achieve a reduction in potential EtO emissions from the sterilization process, even relative to the very low PTE associated with the existing control systems. The proposed project will cause a negligible increase in products of combustion (POC) emissions due to the slightly larger natural gas-fired burner associated with the catalytic oxidizer (see Table 3 of Appendix B).

## **4. REGULATORY ANALYSIS**

B. Braun has reviewed the Federal and Commonwealth of Pennsylvania air quality regulations to determine which regulations potentially apply to the proposed project. This section summarizes potentially applicable air quality requirements.

### **4.1 FEDERAL REGULATIONS**

For the purpose of this PAA, potentially applicable Federal regulations are defined as:

- Standards of Performance for New Stationary Sources (NSPS)
- National Emission Standards for Hazardous Air Pollutants (NESHAP)
- New Source Review (NSR)

A discussion of each specific Federal requirement is provided in the following subsections.

#### **4.1.1 Standards of Performance for New Stationary Sources**

U.S. EPA has promulgated standards of performance for new, modified, or reconstructed sources of air pollution at 40 CFR Part 60, also referred to as New Source Performance Standards (NSPS). No NSPS currently applies to emissions sources at the Facility, and the proposed project will not cause applicability of any NSPS.

#### **4.1.2 National Emission Standards for Hazardous Air Pollutants**

U.S. EPA has promulgated NESHAPs at 40 CFR Parts 61 and 63. NESHAPs promulgated prior to the Clean Air Act Amendments (CAAA) of 1990, found in 40 CFR Part 61, apply to specific compounds emitted from specific processes. There are no 40 CFR Part 61 NESHAP requirements that apply to the proposed project. Pursuant to the CAAA of 1990, process-specific NESHAP are promulgated in 40 CFR Part 63. NESHAP rules promulgated under 40 CFR Part 63, commonly referred to as Maximum Achievable Control Technology (MACT) standards, apply to source categories that are considered area sources or major sources of HAP. A major source of HAP is defined as a source with the facility-wide PTE emissions of any single HAP at a rate equal to 10 tons per year (tpy) or more, or with the facility-wide PTE emissions of total HAP equal to 25 tpy

or more. The Facility is an area source of HAP. Potentially applicable NESHAPs are discussed below.

#### **4.1.2.1 40 CFR Part 63, Subpart O**

40 CFR Part 63, Subpart O – Ethylene Oxide Emissions Standards for Sterilization Facilities applies to sources that use EtO in sterilization or fumigation operations. Existing sources at the Facility are currently subject to 40 CFR Part 63, Subpart O, and these standards are currently listed in Source Group 1 of the TVOP. Specifically, Source Group 1 is subject to the requirement to utilize a control device to achieve a 99% reduction in EtO emissions from the sterilization chambers in accordance with 40 CFR §63.362(c), and a 99% emission reduction or an outlet EtO concentration of less than or equal to 1 ppmv (whichever is less stringent) from the Aeration Room, in accordance with 40 CFR §63.362(d).

Implementation of the proposed project will not change the applicability to the Facility of 40 CFR Part 63, Subpart O. The Anguil System is designed and guaranteed to ensure compliance with 40 CFR Part 63, Subpart O. Because the applicable requirements are not changing, B. Braun did not complete Addendum forms for 40 CFR Part 63, Subpart O. Additionally, B. Braun requests that Section E, Source Group 1, Condition #007 of the operating permit, pertaining to operating limits for Control Devices C001 and C002, be removed as post-project Control Devices C001 and C002 will not be in operation. Additional information related to initial performance testing, monitoring, and recordkeeping has been included within Section E of the PADEP Process Form.

#### **4.1.3 New Source Review**

The Facility is located in Lehigh County which is classified as in attainment or unclassifiable for all regulated NSR pollutants with respect to the National Ambient Air Quality Standards (NAAQS). However, Lehigh County is managed as a moderate ozone nonattainment area with regard to NNSR applicability by virtue of its inclusion in the Northeast Ozone Transport Region (OTR). As a result, the Facility evaluated the applicability of both the NNSR regulations and Prevention of Significant Deterioration (PSD) regulations.



#### **4.1.3.1 Nonattainment New Source Review**

U.S. EPA has approved PADEP's NNSR regulations through their incorporation into Pennsylvania's State Implementation Plan (SIP). These state-specific NNSR regulations are codified in 25 Pa. Code Chapter 127, Subchapter E. NNSR applicability is addressed below under the Commonwealth of Pennsylvania regulatory review section of this PAA.

#### **4.1.3.2 Prevention of Significant Deterioration**

The Facility does not meet the definition of a major stationary source, nor does the project itself meet the definition of a major stationary source with respect to the Federal PSD rules. As presented in Appendix B, potential emissions of each applicable regulated NSR pollutant is less than 250 tpy. Therefore, the PSD regulations do not apply to the Facility and an evaluation of PSD is not required.

### **4.2 COMMONWEALTH OF PENNSYLVANIA REGULATIONS**

The proposed project is potentially subject to the following Commonwealth of Pennsylvania air quality regulations which are codified in Title 25 – Environmental Protection of the Pennsylvania Code (25 Pa. Code):

- Chapter 122 – National Standards of Performance for New Stationary Sources
- Chapter 123 – Standards for Contaminants
- Chapter 124 – National Emission Standards for Hazardous Air Pollutants
- Chapter 127 – Construction, Modification, Reactivation, and Operation of Sources
- Chapter 129 – Standards for Sources

A discussion of each specific Pennsylvania requirement is provided in the following subsections.

#### **4.2.1 Chapter 122 – National Standards of Performance for New Stationary Sources**

The Federal NSPS are adopted in their entirety by reference at 25 Pa. Code §122.3. The inapplicability of the NSPS provisions is addressed in the preceding section regarding Federal requirements.

## **4.2.2 Chapter 123 – Standards for Contaminants**

The following sections discuss the applicability of 25 Pa. Code Chapter 123.

### ***4.2.2.1 Fugitive Emissions***

Standards for fugitive emissions are addressed in 25 Pa. Code §123.1 of the Commonwealth of Pennsylvania air quality regulations. 25 Pa. Code §123.1 prohibits the emission of certain types of fugitive air contaminants and requires that reasonable actions be taken to prevent fugitive emissions from becoming airborne. Installation and operation of the Anguil System will not result in the emission of fugitive air contaminants.

### ***4.2.2.2 Malodors***

Standards for malodors are addressed in 25 Pa. Code §123.31 of the Commonwealth of Pennsylvania air quality regulations. Pursuant to 25 Pa. Code §123.31, a person may not permit the emission into the outdoor atmosphere of any malodorous air contaminants from any source in such a manner that the malodors are detectable outside the property of the facility. The proposed project will not cause malodorous air emissions, and B. Braun will otherwise continue to comply with this regulation.

### ***4.2.2.3 Visible Emissions***

Standards for visible emissions are addressed in 25 Pa. Code §123.41 of the Commonwealth of Pennsylvania air quality regulations. 25 Pa. Code §123.41 prohibits visible emissions in excess of 20% for a period or periods aggregating more than three minutes in any one hour and in excess of 60% at any time. The proposed project will not cause visible air emissions in excess of any applicable standard, and B. Braun will otherwise continue to comply with this regulation.

## **4.2.3 Chapter 124 – National Emission Standards for Hazardous Air Pollutants**

The Federal NESHAPs are adopted in their entirety by reference at 25 Pa. Code §124.3 and are discussed in detail in the preceding section regarding Federal requirements.

#### **4.2.4 Chapter 127 – Construction, Modification, Reactivation and Operation of Sources**

The following sections discuss the applicability of 25 Pa. Code Chapter 127.

##### **4.2.4.1 Subchapter B – Plan Approval Requirements**

B. Braun has completed the appropriate PADEP PAA forms which have been included as Appendix A of this PAA. The proposed air cleaning device must also be capable of being and will be operated and maintained in accordance with good air pollution control practices, pursuant to 25 Pa. Code §127.12(a)(10). Proper operation of the Anguil System will be confirmed via initial performance testing, monitoring, and recordkeeping.

Pursuant to 25 Pa. Code §127.12(a)(5), a PAA shall show that emissions from a new source will be the minimum attainable through the use of BAT. BAT is defined in 25 Pa. Code §121.1 as:

*“Equipment, devices, methods or techniques as determined by the Department which will prevent, reduce or control emissions of air contaminants to the maximum degree possible and which are available or may be made available.”*

B. Braun is not proposing to install and operate a new air contamination source as part of this project. Therefore, BAT is not applicable to the proposed project. In addition, as discussed in Section 4.1.2.1, the Anguil system is expected to achieve an emissions reduction that exceeds Federal MACT requirements and PADEP’s prior BAT determination.

##### **4.2.4.2 Subchapter D – Prevention of Significant Deterioration of Air Quality**

Pennsylvania incorporates the Federal PSD regulations by reference at 25 Pa. Code §127.83. The basis for the inapplicability of PSD to the project is included above under the Federal requirements.

##### **4.2.4.3 Subchapter E – Nonattainment New Source Review**

The Facility is located in Lehigh County which is classified as in attainment or unclassifiable for all regulated NSR pollutants with respect to the NAAQS. However, Lehigh County is managed

as a moderate ozone nonattainment area with regard to NNSR applicability by virtue of its inclusion in the OTR pursuant to 25 Pa. Code §127.201(c).

The Facility's status as a minor source with respect to NNSR requirements will not change as a result of this project. In addition, the Facility is not currently classified as a "major" VOC or nitrogen oxides (NO<sub>x</sub>) source under the NNSR permitting requirements because current facility-wide potential VOC and NO<sub>x</sub> emissions do not exceed 50 tpy and 100 tpy, respectively. Therefore, the NNSR regulations do not apply to the Facility and an evaluation of NNSR is not required.

#### ***4.2.4.4 Subchapter G – Title V Operating Permits***

On November 8, 2019, B. Braun submitted an application to PADEP to convert the current Facility's TVOP to an SOOP. The Facility will remain a non-major source with regard to TVOP requirements following implementation of the proposed project. Therefore, 25 Pa. Code Chapter 127 Subchapter G does not apply.

#### ***4.2.4.5 Subchapter I – Plan Approval and Operating Permit Fees***

25 Pa. Code §127.702 specifies the fee required to submit a PAA for facilities. The fee for a PAA for sources subject to standards adopted under Chapter 122 or Chapter 124 is \$1,700 in accordance with 25 Pa. Code §127.702(d)(3). A check for \$1,700 payable to the "Commonwealth of Pennsylvania Clean Air Fund" is included with this application.

### **4.2.5 Chapter 129 – Standards for Sources**

The following sections discuss the applicability of 25 Pa. Code Chapter 129.

#### ***4.2.5.1 25 Pa. Code §§129.96 – §129.100***

25 Pa. Code §§129.96 – 129.100 contains additional Reasonably Available Control Technology (RACT) requirements for sources that meet the definition of a major NO<sub>x</sub> or VOC emitting facility. Potential emissions from the Facility are less than 50 tpy of VOC and 100 tpy of NO<sub>x</sub>, and the Facility emissions will remain below these thresholds post-project. Therefore, the Facility is not a major source of VOC or NO<sub>x</sub> and the RACT requirements contained in 25 Pa. Code §§129.96 – 129.100 do not apply to the Facility.

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## **APPENDIX A – PADEP APPLICATION FORMS**

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Submit in Triplicate

COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF AIR QUALITY

## PROCESSES

### Application for Plan Approval to Construct, Modify or Reactivate an Air Contamination Source and/or Install an Air Cleaning Device

This application must be submitted with the General Information Form (GIF).

Before completing this form, read the instructions provided for the form.

#### Section A - Facility Name, Checklist And Certification

Organization Name or Registered Fictitious Name/Facility Name: B BRAUN MED/ALLENTOWN

DEP Client ID# (if known): 94048

Type of Review required and Fees:

- ☐ Source which is not subject to NSPS, NESHAPs, MACT, NSR and PSD: ..... \$ \_\_\_\_\_
- ☒ Source requiring approval under NSPS or NESHAPS or both: ..... \$ 1,700
- ☐ Source requiring approval under NSR regulations: ..... \$ \_\_\_\_\_
- ☐ Source requiring the establishment of a MACT limitation: ..... \$ \_\_\_\_\_
- ☐ Source requiring approval under PSD: ..... \$ \_\_\_\_\_

#### Applicant's Checklist

Check the following list to make sure that all the required documents are included.

- ☒ General Information Form (GIF)
- ☒ Processes Plan Approval Application
- ☒ Compliance Review Form or provide reference of most recently submitted compliance review form for facilities submitting on a periodic basis: \_\_\_\_\_
- ☒ Copy and Proof of County and Municipal Notifications
- ☒ Permit Fees
- ☐ Addendum A: Source Applicable Requirements (only applicable to existing Title V facility)
- Not Applicable (N/A) – State Only**

#### Certification of Truth, Accuracy and Completeness by a Responsible Official

I, Rex Boland, certify under penalty of law in 18 Pa. C. S. A. §4904, and 35 P.S. §4009(b) (2) that based on information and belief formed after reasonable inquiry, the statements and information in this application are true, accurate and complete.

(Signature): Rex A. Boland  
Name (Print): Rex Boland

Date: 11-21-19  
Title: VP/GM of Allentown Operations

#### OFFICIAL USE ONLY

Application No. \_\_\_\_\_ Unit ID \_\_\_\_\_ Site ID \_\_\_\_\_  
DEP Client ID #: \_\_\_\_\_ APS. ID \_\_\_\_\_ AUTH. ID \_\_\_\_\_  
Date Received \_\_\_\_\_ Date Assigned \_\_\_\_\_ Reviewed By \_\_\_\_\_  
Date of 1<sup>st</sup> Technical Deficiency \_\_\_\_\_ Date of 2<sup>nd</sup> Technical Deficiency \_\_\_\_\_  
Comments: \_\_\_\_\_



## Section B - Processes Information

### 1. Source Information

Source Description (give type, use, raw materials, product, etc). Attach additional sheets as necessary.

**Sterilizer – 1,000 cu. ft.**

Manufacturer <b>ETC</b>	Model No. <b>33714</b>	Number of Sources <b>1</b>
Source Designation <b>Source ID 101</b>	Maximum Capacity <b>393,470 lb/year EtO across Source IDs 101 – 108</b>	Rated Capacity <b>393,470 lb/year EtO across Source IDs 101 – 108</b>

Type of Material Processed

**Ethylene Oxide (EtO)**

#### Maximum Operating Schedule

Hours/Day <b>24</b>	Days/Week <b>7</b>	Days/Year <b>365</b>	Hours/Year <b>8,760</b>
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Operational restrictions existing or requested, if any (e.g., bottlenecks or voluntary restrictions to limit PTE)

#### Capacity (specify units)

Per Hour <b>Variable</b>	Per Day <b>1,078 lb EtO across Source IDs 101 – 108</b>	Per Week <b>7,546 lb EtO across Source IDs 101 – 108</b>	Per Year <b>393,470 lb EtO across Source IDs 101 – 108</b>
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#### Operating Schedule

Hours/Day <b>24</b>	Days/Week <b>7</b>	Days/Year <b>365</b>	Hours/Year <b>8,760</b>
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Seasonal variations (Months) From to

If variations exist, describe them  
**N/A**

### 2. Fuel – N/A

Type	Quantity Hourly	Annually	Sulfur	% Ash (Weight)	BTU Content
Oil Number _____	GPH @ 60°F	X 10 <sup>3</sup> Gal	% by wt		Btu/Gal. & Lbs./Gal. @ 60 °F
Oil Number _____	GPH @ 60°F	X 10 <sup>3</sup> Gal	% by wt		Btu/Gal. & Lbs./Gal. @ 60 °F
Natural Gas	SCFH	X 10 <sup>6</sup> SCF	grain/100 SCF		Btu/SCF
Gas (other) _____	SCFH	X 10 <sup>6</sup> SCF	grain/100 SCF		Btu/SCF
Coal _____	TPH	Tons	% by wt		Btu/lb
Other * _____					
_____					
_____					

\*Note: Describe and furnish information separately for other fuels in Addendum B.

### Section B - Processes Information (Continued)

#### 3. Burner – N/A

Manufacturer	Type and Model No.	Number of Burners
Description:		
Rated Capacity		Maximum Capacity

#### 4. Process Storage Vessels – N/A

##### A. For Liquids:

Name of material stored		
Tank I.D. No.	Manufacturer	Date Installed
Maximum Pressure		Capacity (gallons/Meter <sup>3</sup> )
Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)		
Relief valve/vent set pressure (psig)		Vapor press. of liquid at storage temp. (psia/kPa)
Type of Roof: Describe:		
Total Throughput Per Year		Number of fills per day (fill/day): Filling Rate (gal./min.): Duration of fill hr./fill):

##### B. For Solids

Type: <input type="checkbox"/> Silo <input type="checkbox"/> Storage Bin <input type="checkbox"/> Other, Describe		Name of Material Stored
Silo/Storage Bin I.D. No.	Manufacturer	Date Installed
State whether the material will be stored in loose or bags in silos		Capacity (Tons)
Turn over per year in tons		Turn over per day in tons
Describe fugitive dust control system for loading and handling operations		
Describe material handling system		

#### 5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential"? ☐ Yes ☒ No  
 If yes, include justification for confidentiality. Place such information on separate pages marked "**confidential**".

## Section B - Processes Information (Continued)

### 6. Miscellaneous Information

Attach flow diagram of process giving all (gaseous, liquid and solid) flow rates. Also, list all raw materials charged to process equipment, and the amounts charged (tons/hour, etc.) at rated capacity (give maximum, minimum and average charges describing fully expected variations in production rates). Indicate (on diagram) all points where contaminants are controlled (location of water sprays, collection hoods, or other pickup points, etc.). Describe collection hoods location, design, airflow and capture efficiency. Describe any restriction requested and how it will be monitored.

***Please refer to Figure 2-2 of the Application Narrative.***

Describe fully the facilities provided to monitor and to record process operating conditions, which may affect the emission of air contaminants. Show that they are reasonable and adequate.

***Please refer to Section C.11.***

Describe each proposed modification to an existing source.

***N/A – B. Braun is not proposing modifications to Source ID 101.***

Identify and describe all fugitive emission points, all relief and emergency valves and any by-pass stacks.

***Please refer to Figure 2-2 of the Application Narrative.***

Describe how emissions will be minimized especially during start up, shut down, process upsets and/or disruptions.

***Please refer to Section C.11.***

Anticipated Milestones:

- i. Expected commencement date of construction/reconstruction/installation: January 2020
- ii. Expected completion date of construction/reconstruction/installation: May 2020
- iii. Anticipated date of start-up: May 2020

## Section B - Processes Information

### 1. Source Information

Source Description (give type, use, raw materials, product, etc). Attach additional sheets as necessary.

**Sterilizer – 1,000 cu. ft.**

Manufacturer <b>AMSCO</b>	Model No. <b>363365</b>	Number of Sources <b>1</b>
Source Designation <b>Source ID 102</b>	Maximum Capacity <b>393,470 lb/year EtO across Source IDs 101 – 108</b>	Rated Capacity <b>393,470 lb/year EtO across Source IDs 101 – 108</b>

Type of Material Processed  
**EtO**

#### Maximum Operating Schedule

Hours/Day <b>24</b>	Days/Week <b>7</b>	Days/Year <b>365</b>	Hours/Year <b>8,760</b>
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Operational restrictions existing or requested, if any (e.g., bottlenecks or voluntary restrictions to limit PTE)

#### Capacity (specify units)

Per Hour <b>Variable</b>	Per Day <b>1,078 lb EtO across Source IDs 101 – 108</b>	Per Week <b>7,546 lb EtO across Source IDs 101 – 108</b>	Per Year <b>393,470 lb EtO across Source IDs 101 – 108</b>
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#### Operating Schedule

Hours/Day <b>24</b>	Days/Week <b>7</b>	Days/Year <b>365</b>	Hours/Year <b>8,760</b>
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Seasonal variations (Months) From to

If variations exist, describe them  
**N/A**

### 2. Fuel – N/A

Type	Quantity Hourly	Annually	Sulfur	% Ash (Weight)	BTU Content
Oil Number _____	GPH @ 60°F	X 10 <sup>3</sup> Gal	% by wt		Btu/Gal. & Lbs./Gal. @ 60 °F
Oil Number _____	GPH @ 60°F	X 10 <sup>3</sup> Gal	% by wt		Btu/Gal. & Lbs./Gal. @ 60 °F
Natural Gas	SCFH	X 10 <sup>6</sup> SCF	grain/100 SCF		Btu/SCF
Gas (other) _____	SCFH	X 10 <sup>6</sup> SCF	grain/100 SCF		Btu/SCF
Coal _____	TPH	Tons	% by wt		Btu/lb
Other * _____					
_____					
_____					

\*Note: Describe and furnish information separately for other fuels in Addendum B.

### Section B - Processes Information (Continued)

**3. Burner – N/A**

Manufacturer	Type and Model No.	Number of Burners
Description:		
Rated Capacity	Maximum Capacity	

**4. Process Storage Vessels – N/A****A. For Liquids:**

Name of material stored		
Tank I.D. No.	Manufacturer	Date Installed
Maximum Pressure	Capacity (gallons/Meter <sup>3</sup> )	
Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)		
Relief valve/vent set pressure (psig)	Vapor press. of liquid at storage temp. (psia/kPa)	
Type of Roof: Describe:		
Total Throughput Per Year	Number of fills per day (fill/day): Filling Rate (gal./min.): Duration of fill hr./fill):	

**B. For Solids**

Type: <input type="checkbox"/> Silo <input type="checkbox"/> Storage Bin <input type="checkbox"/> Other, Describe		Name of Material Stored
Silo/Storage Bin I.D. No.	Manufacturer	Date Installed
State whether the material will be stored in loose or bags in silos		Capacity (Tons)
Turn over per year in tons		Turn over per day in tons
Describe fugitive dust control system for loading and handling operations		
Describe material handling system		

**5. Request for Confidentiality**

Do you request any information on this application to be treated as "Confidential"? ☐ Yes ☒ No  
 If yes, include justification for confidentiality. Place such information on separate pages marked "**confidential**".

## Section B - Processes Information (Continued)

### 6. Miscellaneous Information

Attach flow diagram of process giving all (gaseous, liquid and solid) flow rates. Also, list all raw materials charged to process equipment, and the amounts charged (tons/hour, etc.) at rated capacity (give maximum, minimum and average charges describing fully expected variations in production rates). Indicate (on diagram) all points where contaminants are controlled (location of water sprays, collection hoods, or other pickup points, etc.). Describe collection hoods location, design, airflow and capture efficiency. Describe any restriction requested and how it will be monitored.

***Please refer to Figure 2-2 of the Application Narrative.***

Describe fully the facilities provided to monitor and to record process operating conditions, which may affect the emission of air contaminants. Show that they are reasonable and adequate.

***Please refer to Section C.11.***

Describe each proposed modification to an existing source.

***N/A – B. Braun is not proposing modifications to Source ID 102.***

Identify and describe all fugitive emission points, all relief and emergency valves and any by-pass stacks.

***Please refer to Figure 2-2 of the Application Narrative.***

Describe how emissions will be minimized especially during start up, shut down, process upsets and/or disruptions.

***Please refer to Section C.11.***

Anticipated Milestones:

- i. Expected commencement date of construction/reconstruction/installation: N/A
- ii. Expected completion date of construction/reconstruction/installation: N/A
- iii. Anticipated date of start-up: N/A



## Section B - Processes Information

### 1. Source Information

Source Description (give type, use, raw materials, product, etc). Attach additional sheets as necessary.

**Sterilizer – 1,000 cu. ft.**

Manufacturer <b>ETC</b>	Model No. <b>1124</b>	Number of Sources <b>1</b>
Source Designation <b>Source ID 103</b>	Maximum Capacity <b>393,470 lb/year EtO across Source IDs 101 – 108</b>	Rated Capacity <b>393,470 lb/year EtO across Source IDs 101 – 108</b>

Type of Material Processed  
**EtO**

#### Maximum Operating Schedule

Hours/Day <b>24</b>	Days/Week <b>7</b>	Days/Year <b>365</b>	Hours/Year <b>8,760</b>
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Operational restrictions existing or requested, if any (e.g., bottlenecks or voluntary restrictions to limit PTE)

#### Capacity (specify units)

Per Hour <b>Variable</b>	Per Day <b>1,078 lb EtO across Source IDs 101 – 108</b>	Per Week <b>7,546 lb EtO across Source IDs 101 – 108</b>	Per Year <b>393,470 lb EtO across Source IDs 101 – 108</b>
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#### Operating Schedule

Hours/Day <b>24</b>	Days/Week <b>7</b>	Days/Year <b>365</b>	Hours/Year <b>8,760</b>
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Seasonal variations (Months) From to

If variations exist, describe them  
**N/A**

### 2. Fuel – N/A

Type	Quantity Hourly	Annually	Sulfur	% Ash (Weight)	BTU Content
Oil Number _____	GPH @ 60°F	X 10 <sup>3</sup> Gal	% by wt		Btu/Gal. & Lbs./Gal. @ 60 °F
Oil Number _____	GPH @ 60°F	X 10 <sup>3</sup> Gal	% by wt		Btu/Gal. & Lbs./Gal. @ 60 °F
Natural Gas	SCFH	X 10 <sup>6</sup> SCF	grain/100 SCF		Btu/SCF
Gas (other) _____	SCFH	X 10 <sup>6</sup> SCF	grain/100 SCF		Btu/SCF
Coal _____	TPH	Tons	% by wt		Btu/lb
Other * _____					
_____					
_____					

\*Note: Describe and furnish information separately for other fuels in Addendum B.

### Section B - Processes Information (Continued)

**3. Burner – N/A**

Manufacturer	Type and Model No.	Number of Burners
Description:		
Rated Capacity	Maximum Capacity	

**4. Process Storage Vessels – N/A****A. For Liquids:**

Name of material stored		
Tank I.D. No.	Manufacturer	Date Installed
Maximum Pressure	Capacity (gallons/Meter <sup>3</sup> )	
Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)		
Relief valve/vent set pressure (psig)	Vapor press. of liquid at storage temp. (psia/kPa)	
Type of Roof: Describe:		
Total Throughput Per Year	Number of fills per day (fill/day): Filling Rate (gal./min.): Duration of fill hr./fill):	

**B. For Solids**

Type: <input type="checkbox"/> Silo <input type="checkbox"/> Storage Bin <input type="checkbox"/> Other, Describe		Name of Material Stored
Silo/Storage Bin I.D. No.	Manufacturer	Date Installed
State whether the material will be stored in loose or bags in silos		Capacity (Tons)
Turn over per year in tons		Turn over per day in tons
Describe fugitive dust control system for loading and handling operations		
Describe material handling system		

**5. Request for Confidentiality**

Do you request any information on this application to be treated as "Confidential"? ☐ Yes ☒ No  
 If yes, include justification for confidentiality. Place such information on separate pages marked "**confidential**".

## Section B - Processes Information (Continued)

### 6. Miscellaneous Information

Attach flow diagram of process giving all (gaseous, liquid and solid) flow rates. Also, list all raw materials charged to process equipment, and the amounts charged (tons/hour, etc.) at rated capacity (give maximum, minimum and average charges describing fully expected variations in production rates). Indicate (on diagram) all points where contaminants are controlled (location of water sprays, collection hoods, or other pickup points, etc.). Describe collection hoods location, design, airflow and capture efficiency. Describe any restriction requested and how it will be monitored.

***Please refer to Figure 2-2 of the Application Narrative.***

Describe fully the facilities provided to monitor and to record process operating conditions, which may affect the emission of air contaminants. Show that they are reasonable and adequate.

***Please refer to Section C.11.***

Describe each proposed modification to an existing source.

***N/A – B. Braun is not proposing modifications to Source ID 103.***

Identify and describe all fugitive emission points, all relief and emergency valves and any by-pass stacks.

***Please refer to Figure 2-2 of the Application Narrative.***

Describe how emissions will be minimized especially during start up, shut down, process upsets and/or disruptions.

***Please refer to Section C.11.***

Anticipated Milestones:

- i. Expected commencement date of construction/reconstruction/installation: N/A
- ii. Expected completion date of construction/reconstruction/installation: N/A
- iii. Anticipated date of start-up: N/A

## Section B - Processes Information

### 1. Source Information

Source Description (give type, use, raw materials, product, etc). Attach additional sheets as necessary.

**Sterilizer – 1,000 cu. ft.**

Manufacturer <b>VACUDYNE</b>	Model No. <b>J70-49</b>	Number of Sources <b>1</b>
Source Designation <b>Source ID 104</b>	Maximum Capacity <b>393,470 lb/year EtO across Source IDs 101 – 108</b>	Rated Capacity <b>393,470 lb/year EtO across Source IDs 101 – 108</b>

Type of Material Processed  
**EtO**

#### Maximum Operating Schedule

Hours/Day <b>24</b>	Days/Week <b>7</b>	Days/Year <b>365</b>	Hours/Year <b>8,760</b>
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Operational restrictions existing or requested, if any (e.g., bottlenecks or voluntary restrictions to limit PTE)

#### Capacity (specify units)

Per Hour <b>Variable</b>	Per Day <b>1,078 lb EtO across Source IDs 101 – 108</b>	Per Week <b>7,546 lb EtO across Source IDs 101 – 108</b>	Per Year <b>393,470 lb EtO across Source IDs 101 – 108</b>
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#### Operating Schedule

Hours/Day <b>24</b>	Days/Week <b>7</b>	Days/Year <b>365</b>	Hours/Year <b>8,760</b>
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Seasonal variations (Months) From to

If variations exist, describe them  
**N/A**

### 2. Fuel – N/A

Type	Quantity Hourly	Annually	Sulfur	% Ash (Weight)	BTU Content
Oil Number _____	GPH @ 60°F	X 10 <sup>3</sup> Gal	% by wt		Btu/Gal. & Lbs./Gal. @ 60 °F
Oil Number _____	GPH @ 60°F	X 10 <sup>3</sup> Gal	% by wt		Btu/Gal. & Lbs./Gal. @ 60 °F
Natural Gas	SCFH	X 10 <sup>6</sup> SCF	grain/100 SCF		Btu/SCF
Gas (other) _____	SCFH	X 10 <sup>6</sup> SCF	grain/100 SCF		Btu/SCF
Coal _____	TPH	Tons	% by wt		Btu/lb
Other * _____					
_____					
_____					

\*Note: Describe and furnish information separately for other fuels in Addendum B.

### Section B - Processes Information (Continued)

#### 3. Burner – N/A

Manufacturer	Type and Model No.	Number of Burners
Description:		
Rated Capacity		Maximum Capacity

#### 4. Process Storage Vessels – N/A

##### A. For Liquids:

Name of material stored		
Tank I.D. No.	Manufacturer	Date Installed
Maximum Pressure		Capacity (gallons/Meter <sup>3</sup> )
Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)		
Relief valve/vent set pressure (psig)		Vapor press. of liquid at storage temp. (psia/kPa)
Type of Roof: Describe:		
Total Throughput Per Year		Number of fills per day (fill/day): Filling Rate (gal./min.): Duration of fill hr./fill):

##### B. For Solids

Type: <input type="checkbox"/> Silo <input type="checkbox"/> Storage Bin <input type="checkbox"/> Other, Describe		Name of Material Stored
Silo/Storage Bin I.D. No.	Manufacturer	Date Installed
State whether the material will be stored in loose or bags in silos		Capacity (Tons)
Turn over per year in tons		Turn over per day in tons
Describe fugitive dust control system for loading and handling operations		
Describe material handling system		

#### 5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential"? ☐ Yes ☒ No  
 If yes, include justification for confidentiality. Place such information on separate pages marked "**confidential**".

## Section B - Processes Information (Continued)

### 6. Miscellaneous Information

Attach flow diagram of process giving all (gaseous, liquid and solid) flow rates. Also, list all raw materials charged to process equipment, and the amounts charged (tons/hour, etc.) at rated capacity (give maximum, minimum and average charges describing fully expected variations in production rates). Indicate (on diagram) all points where contaminants are controlled (location of water sprays, collection hoods, or other pickup points, etc.). Describe collection hoods location, design, airflow and capture efficiency. Describe any restriction requested and how it will be monitored.

***Please refer to Figure 2-2 of the Application Narrative.***

Describe fully the facilities provided to monitor and to record process operating conditions, which may affect the emission of air contaminants. Show that they are reasonable and adequate.

***Please refer to Section C.11.***

Describe each proposed modification to an existing source.

***N/A – B. Braun is not proposing modifications to Source ID 104.***

Identify and describe all fugitive emission points, all relief and emergency valves and any by-pass stacks.

***Please refer to Figure 2-2 of the Application Narrative.***

Describe how emissions will be minimized especially during start up, shut down, process upsets and/or disruptions.

***Please refer to Section C.11.***

Anticipated Milestones:

- i. Expected commencement date of construction/reconstruction/installation: N/A
- ii. Expected completion date of construction/reconstruction/installation: N/A
- iii. Anticipated date of start-up: N/A



## Section B - Processes Information

### 1. Source Information

Source Description (give type, use, raw materials, product, etc). Attach additional sheets as necessary.

**Sterilizer – 1,200 cu. ft.**

Manufacturer <b>VACUDYNE</b>	Model No. <b>J78-65</b>	Number of Sources <b>1</b>
Source Designation <b>Source ID 105</b>	Maximum Capacity <b>393,470 lb/year EtO across Source IDs 101 – 108</b>	Rated Capacity <b>393,470 lb/year EtO across Source IDs 101 – 108</b>

Type of Material Processed  
**EtO**

#### Maximum Operating Schedule

Hours/Day <b>24</b>	Days/Week <b>7</b>	Days/Year <b>365</b>	Hours/Year <b>8,760</b>
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Operational restrictions existing or requested, if any (e.g., bottlenecks or voluntary restrictions to limit PTE)

#### Capacity (specify units)

Per Hour <b>Variable</b>	Per Day <b>1,078 lb EtO across Source IDs 101 – 108</b>	Per Week <b>7,546 lb EtO across Source IDs 101 – 108</b>	Per Year <b>393,470 lb EtO across Source IDs 101 – 108</b>
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#### Operating Schedule

Hours/Day <b>24</b>	Days/Week <b>7</b>	Days/Year <b>365</b>	Hours/Year <b>8,760</b>
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Seasonal variations (Months) From to

If variations exist, describe them  
**N/A**

### 2. Fuel – N/A

Type	Quantity Hourly	Annually	Sulfur	% Ash (Weight)	BTU Content
Oil Number _____	GPH @ 60°F	X 10 <sup>3</sup> Gal	% by wt		Btu/Gal. & Lbs./Gal. @ 60 °F
Oil Number _____	GPH @ 60°F	X 10 <sup>3</sup> Gal	% by wt		Btu/Gal. & Lbs./Gal. @ 60 °F
Natural Gas	SCFH	X 10 <sup>6</sup> SCF	grain/100 SCF		Btu/SCF
Gas (other) _____	SCFH	X 10 <sup>6</sup> SCF	grain/100 SCF		Btu/SCF
Coal _____	TPH	Tons	% by wt		Btu/lb
Other * _____					
_____					
_____					

\*Note: Describe and furnish information separately for other fuels in Addendum B.

### Section B - Processes Information (Continued)

#### 3. Burner – N/A

Manufacturer	Type and Model No.	Number of Burners
Description:		
Rated Capacity	Maximum Capacity	

#### 4. Process Storage Vessels – N/A

##### A. For Liquids:

Name of material stored		
Tank I.D. No.	Manufacturer	Date Installed
Maximum Pressure	Capacity (gallons/Meter <sup>3</sup> )	
Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)		
Relief valve/vent set pressure (psig)	Vapor press. of liquid at storage temp. (psia/kPa)	
Type of Roof: Describe:		
Total Throughput Per Year	Number of fills per day (fill/day): Filling Rate (gal./min.): Duration of fill hr./fill):	

##### B. For Solids

Type: <input type="checkbox"/> Silo <input type="checkbox"/> Storage Bin <input type="checkbox"/> Other, Describe		Name of Material Stored
Silo/Storage Bin I.D. No.	Manufacturer	Date Installed
State whether the material will be stored in loose or bags in silos		Capacity (Tons)
Turn over per year in tons		Turn over per day in tons
Describe fugitive dust control system for loading and handling operations		
Describe material handling system		

#### 5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential"? ☐ Yes ☒ No  
 If yes, include justification for confidentiality. Place such information on separate pages marked "confidential".

## Section B - Processes Information (Continued)

### 6. Miscellaneous Information

Attach flow diagram of process giving all (gaseous, liquid and solid) flow rates. Also, list all raw materials charged to process equipment, and the amounts charged (tons/hour, etc.) at rated capacity (give maximum, minimum and average charges describing fully expected variations in production rates). Indicate (on diagram) all points where contaminants are controlled (location of water sprays, collection hoods, or other pickup points, etc.). Describe collection hoods location, design, airflow and capture efficiency. Describe any restriction requested and how it will be monitored.

***Please refer to Figure 2-2 of the Application Narrative.***

Describe fully the facilities provided to monitor and to record process operating conditions, which may affect the emission of air contaminants. Show that they are reasonable and adequate.

***Please refer to Section C.11.***

Describe each proposed modification to an existing source.

***N/A – B. Braun is not proposing modifications to Source ID 105.***

Identify and describe all fugitive emission points, all relief and emergency valves and any by-pass stacks.

***Please refer to Figure 2-2 of the Application Narrative.***

Describe how emissions will be minimized especially during start up, shut down, process upsets and/or disruptions.

***Please refer to Section C.11.***

Anticipated Milestones:

- i. Expected commencement date of construction/reconstruction/installation: N/A
- ii. Expected completion date of construction/reconstruction/installation: N/A
- iii. Anticipated date of start-up: N/A

## Section B - Processes Information

### 1. Source Information

Source Description (give type, use, raw materials, product, etc). Attach additional sheets as necessary.

**Sterilizer – 1,250 cu. ft.**

Manufacturer <b>STI</b>	Model No. <b>STI-1300</b>	Number of Sources <b>1</b>
Source Designation <b>Existing Source ID 106</b>	Maximum Capacity <b>393,470 lb/year EtO across Source IDs 101 – 108</b>	Rated Capacity <b>393,470 lb/year EtO across Source IDs 101 – 108</b>

Type of Material Processed  
**EtO**

#### Maximum Operating Schedule

Hours/Day <b>24</b>	Days/Week <b>7</b>	Days/Year <b>365</b>	Hours/Year <b>8,760</b>
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Operational restrictions existing or requested, if any (e.g., bottlenecks or voluntary restrictions to limit PTE)

#### Capacity (specify units)

Per Hour <b>Variable</b>	Per Day <b>1,078 lb EtO across Source IDs 101 – 108</b>	Per Week <b>7,546 lb EtO across Source IDs 101 – 108</b>	Per Year <b>393,470 lb EtO across Source IDs 101 – 108</b>
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#### Operating Schedule

Hours/Day <b>24</b>	Days/Week <b>7</b>	Days/Year <b>365</b>	Hours/Year <b>8,760</b>
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Seasonal variations (Months) From to

If variations exist, describe them  
**N/A**

### 2. Fuel – N/A

Type	Quantity Hourly	Annually	Sulfur	% Ash (Weight)	BTU Content
Oil Number _____	GPH @ 60°F	X 10 <sup>3</sup> Gal	% by wt		Btu/Gal. & Lbs./Gal. @ 60 °F
Oil Number _____	GPH @ 60°F	X 10 <sup>3</sup> Gal	% by wt		Btu/Gal. & Lbs./Gal. @ 60 °F
Natural Gas	SCFH	X 10 <sup>6</sup> SCF	grain/100 SCF		Btu/SCF
Gas (other) _____	SCFH	X 10 <sup>6</sup> SCF	grain/100 SCF		Btu/SCF
Coal	TPH	Tons	% by wt		Btu/lb
Other * _____					
_____					
_____					

\*Note: Describe and furnish information separately for other fuels in Addendum B.

### Section B - Processes Information (Continued)

#### 3. Burner – N/A

Manufacturer	Type and Model No.	Number of Burners
Description:		
Rated Capacity	Maximum Capacity	

#### 4. Process Storage Vessels – N/A

##### A. For Liquids:

Name of material stored		
Tank I.D. No.	Manufacturer	Date Installed
Maximum Pressure	Capacity (gallons/Meter <sup>3</sup> )	
Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)		
Relief valve/vent set pressure (psig)	Vapor press. of liquid at storage temp. (psia/kPa)	
Type of Roof: Describe:		
Total Throughput Per Year	Number of fills per day (fill/day): Filling Rate (gal./min.): Duration of fill hr./fill):	

##### B. For Solids

Type: <input type="checkbox"/> Silo <input type="checkbox"/> Storage Bin <input type="checkbox"/> Other, Describe	Name of Material Stored
Silo/Storage Bin I.D. No.	Manufacturer <span style="float: right;">Date Installed</span>
State whether the material will be stored in loose or bags in silos	Capacity (Tons)
Turn over per year in tons	Turn over per day in tons
Describe fugitive dust control system for loading and handling operations	
Describe material handling system	

#### 5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential"? ☐ Yes ☒ No  
 If yes, include justification for confidentiality. Place such information on separate pages marked "confidential".

## Section B - Processes Information (Continued)

### 6. Miscellaneous Information

Attach flow diagram of process giving all (gaseous, liquid and solid) flow rates. Also, list all raw materials charged to process equipment, and the amounts charged (tons/hour, etc.) at rated capacity (give maximum, minimum and average charges describing fully expected variations in production rates). Indicate (on diagram) all points where contaminants are controlled (location of water sprays, collection hoods, or other pickup points, etc.). Describe collection hoods location, design, airflow and capture efficiency. Describe any restriction requested and how it will be monitored.

***Please refer to Figure 2-2 of the Application Narrative.***

Describe fully the facilities provided to monitor and to record process operating conditions, which may affect the emission of air contaminants. Show that they are reasonable and adequate.

***Please refer to Section C.11.***

Describe each proposed modification to an existing source.

***N/A – B. Braun is not proposing modifications to Source ID 106.***

Identify and describe all fugitive emission points, all relief and emergency valves and any by-pass stacks.

***Please refer to Figure 2-2 of the Application Narrative.***

Describe how emissions will be minimized especially during start up, shut down, process upsets and/or disruptions.

***Please refer to Section C.11.***

Anticipated Milestones:

- i. Expected commencement date of construction/reconstruction/installation: N/A
- ii. Expected completion date of construction/reconstruction/installation: N/A
- iii. Anticipated date of start-up: N/A

## Section B - Processes Information

### 1. Source Information

Source Description (give type, use, raw materials, product, etc). Attach additional sheets as necessary.

**Sterilizer – 3,700 cu. ft.**

Manufacturer <b>VACUDYNE</b>	Model No. <b>J91-24</b>	Number of Sources <b>1</b>
Source Designation <b>Source ID 107</b>	Maximum Capacity <b>393,470 lb/year EtO across Source IDs 101 – 108</b>	Rated Capacity <b>393,470 lb/year EtO across Source IDs 101 – 108</b>

Type of Material Processed  
**EtO**

#### Maximum Operating Schedule

Hours/Day <b>24</b>	Days/Week <b>7</b>	Days/Year <b>365</b>	Hours/Year <b>8,760</b>
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Operational restrictions existing or requested, if any (e.g., bottlenecks or voluntary restrictions to limit PTE)

#### Capacity (specify units)

Per Hour <b>Variable</b>	Per Day <b>1,078 lb EtO across Source IDs 101 – 108</b>	Per Week <b>7,546 lb EtO across Source IDs 101 – 108</b>	Per Year <b>393,470 lb EtO across Source IDs 101 – 108</b>
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#### Operating Schedule

Hours/Day <b>24</b>	Days/Week <b>7</b>	Days/Year <b>365</b>	Hours/Year <b>8,760</b>
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Seasonal variations (Months) From to

If variations exist, describe them  
**N/A**

### 2. Fuel – N/A

Type	Quantity Hourly	Annually	Sulfur	% Ash (Weight)	BTU Content
Oil Number _____	GPH @ 60°F	X 10 <sup>3</sup> Gal	% by wt		Btu/Gal. & Lbs./Gal. @ 60 °F
Oil Number _____	GPH @ 60°F	X 10 <sup>3</sup> Gal	% by wt		Btu/Gal. & Lbs./Gal. @ 60 °F
Natural Gas	SCFH	X 10 <sup>6</sup> SCF	grain/100 SCF		Btu/SCF
Gas (other) _____	SCFH	X 10 <sup>6</sup> SCF	grain/100 SCF		Btu/SCF
Coal _____	TPH	Tons	% by wt		Btu/lb
Other * _____					
_____					
_____					

\*Note: Describe and furnish information separately for other fuels in Addendum B.

### Section B - Processes Information (Continued)

#### 3. Burner – N/A

Manufacturer	Type and Model No.	Number of Burners
Description:		
Rated Capacity	Maximum Capacity	

#### 4. Process Storage Vessels – N/A

##### A. For Liquids:

Name of material stored		
Tank I.D. No.	Manufacturer	Date Installed
Maximum Pressure	Capacity (gallons/Meter <sup>3</sup> )	
Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)		
Relief valve/vent set pressure (psig)	Vapor press. of liquid at storage temp. (psia/kPa)	
Type of Roof: Describe:		
Total Throughput Per Year	Number of fills per day (fill/day): Filling Rate (gal./min.): Duration of fill hr./fill):	

##### B. For Solids

Type: <input type="checkbox"/> Silo <input type="checkbox"/> Storage Bin <input type="checkbox"/> Other, Describe		Name of Material Stored
Silo/Storage Bin I.D. No.	Manufacturer	Date Installed
State whether the material will be stored in loose or bags in silos		Capacity (Tons)
Turn over per year in tons		Turn over per day in tons
Describe fugitive dust control system for loading and handling operations		
Describe material handling system		

#### 5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential"? ☐ Yes ☒ No  
 If yes, include justification for confidentiality. Place such information on separate pages marked "confidential".



## Section B - Processes Information (Continued)

### 6. Miscellaneous Information

Attach flow diagram of process giving all (gaseous, liquid and solid) flow rates. Also, list all raw materials charged to process equipment, and the amounts charged (tons/hour, etc.) at rated capacity (give maximum, minimum and average charges describing fully expected variations in production rates). Indicate (on diagram) all points where contaminants are controlled (location of water sprays, collection hoods, or other pickup points, etc.). Describe collection hoods location, design, airflow and capture efficiency. Describe any restriction requested and how it will be monitored.

***Please refer to Figure 2-2 of the Application Narrative.***

Describe fully the facilities provided to monitor and to record process operating conditions, which may affect the emission of air contaminants. Show that they are reasonable and adequate.

***Please refer to Section C.11.***

Describe each proposed modification to an existing source.

***N/A – B. Braun is not proposing modifications to Source ID 107.***

Identify and describe all fugitive emission points, all relief and emergency valves and any by-pass stacks.

***Please refer to Figure 2-2 of the Application Narrative.***

Describe how emissions will be minimized especially during start up, shut down, process upsets and/or disruptions.

***Please refer to Section C.11.***

Anticipated Milestones:

- i. Expected commencement date of construction/reconstruction/installation: N/A
- ii. Expected completion date of construction/reconstruction/installation: N/A
- iii. Anticipated date of start-up: N/A

## Section B - Processes Information

### 1. Source Information

Source Description (give type, use, raw materials, product, etc). Attach additional sheets as necessary.

**Sterilizer – 130 cu. ft.**

Manufacturer <b>STI</b>	Model No. <b>STI-150</b>	Number of Sources <b>1</b>
Source Designation <b>Source ID 108</b>	Maximum Capacity <b>393,470 lb/year EtO across Source IDs 101 – 108</b>	Rated Capacity <b>393,470 lb/year EtO across Source IDs 101 – 108</b>

Type of Material Processed  
**EtO**

#### Maximum Operating Schedule

Hours/Day <b>24</b>	Days/Week <b>7</b>	Days/Year <b>365</b>	Hours/Year <b>8,760</b>
------------------------	-----------------------	-------------------------	----------------------------

Operational restrictions existing or requested, if any (e.g., bottlenecks or voluntary restrictions to limit PTE)

#### Capacity (specify units)

Per Hour <b>Variable</b>	Per Day <b>1,078 lb EtO across Source IDs 101 – 108</b>	Per Week <b>7,546 lb EtO across Source IDs 101 – 108</b>	Per Year <b>393,470 lb EtO across Source IDs 101 – 108</b>
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#### Operating Schedule

Hours/Day <b>24</b>	Days/Week <b>7</b>	Days/Year <b>365</b>	Hours/Year <b>8,760</b>
------------------------	-----------------------	-------------------------	----------------------------

Seasonal variations (Months) From to

If variations exist, describe them  
**N/A**

### 2. Fuel – N/A

Type	Quantity Hourly	Annually	Sulfur	% Ash (Weight)	BTU Content
Oil Number _____	GPH @ 60°F	X 10 <sup>3</sup> Gal	% by wt		Btu/Gal. & Lbs./Gal. @ 60 °F
Oil Number _____	GPH @ 60°F	X 10 <sup>3</sup> Gal	% by wt		Btu/Gal. & Lbs./Gal. @ 60 °F
Natural Gas	SCFH	X 10 <sup>6</sup> SCF	grain/100 SCF		Btu/SCF
Gas (other) _____	SCFH	X 10 <sup>6</sup> SCF	grain/100 SCF		Btu/SCF
Coal _____	TPH	Tons	% by wt		Btu/lb
Other * _____					
_____					
_____					

\*Note: Describe and furnish information separately for other fuels in Addendum B.

### Section B - Processes Information (Continued)

**3. Burner – N/A**

Manufacturer	Type and Model No.	Number of Burners
Description:		
Rated Capacity	Maximum Capacity	

**4. Process Storage Vessels – N/A****A. For Liquids:**

Name of material stored		
Tank I.D. No.	Manufacturer	Date Installed
Maximum Pressure	Capacity (gallons/Meter <sup>3</sup> )	
Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)		
Relief valve/vent set pressure (psig)	Vapor press. of liquid at storage temp. (psia/kPa)	
Type of Roof: Describe:		
Total Throughput Per Year	Number of fills per day (fill/day): Filling Rate (gal./min.): Duration of fill hr./fill):	

**B. For Solids**

Type: <input type="checkbox"/> Silo <input type="checkbox"/> Storage Bin <input type="checkbox"/> Other, Describe		Name of Material Stored
Silo/Storage Bin I.D. No.	Manufacturer	Date Installed
State whether the material will be stored in loose or bags in silos		Capacity (Tons)
Turn over per year in tons		Turn over per day in tons
Describe fugitive dust control system for loading and handling operations		
Describe material handling system		

**5. Request for Confidentiality**

Do you request any information on this application to be treated as "Confidential"? ☐ Yes ☒ No  
 If yes, include justification for confidentiality. Place such information on separate pages marked "**confidential**".

## Section B - Processes Information (Continued)

### 6. Miscellaneous Information

Attach flow diagram of process giving all (gaseous, liquid and solid) flow rates. Also, list all raw materials charged to process equipment, and the amounts charged (tons/hour, etc.) at rated capacity (give maximum, minimum and average charges describing fully expected variations in production rates). Indicate (on diagram) all points where contaminants are controlled (location of water sprays, collection hoods, or other pickup points, etc.). Describe collection hoods location, design, airflow and capture efficiency. Describe any restriction requested and how it will be monitored.

***Please refer to Figure 2-2 of the Application Narrative.***

Describe fully the facilities provided to monitor and to record process operating conditions, which may affect the emission of air contaminants. Show that they are reasonable and adequate.

***Please refer to Section C.11.***

Describe each proposed modification to an existing source.

***N/A – B. Braun is not proposing modifications to Source ID 108.***

Identify and describe all fugitive emission points, all relief and emergency valves and any by-pass stacks.

***Please refer to Figure 2-2 of the Application Narrative.***

Describe how emissions will be minimized especially during start up, shut down, process upsets and/or disruptions.

***Please refer to Section C.11.***

Anticipated Milestones:

- i. Expected commencement date of construction/reconstruction/installation: N/A
- ii. Expected completion date of construction/reconstruction/installation: N/A
- iii. Anticipated date of start-up: N/A

## Section B - Processes Information

### 1. Source Information

Source Description (give type, use, raw materials, product, etc). Attach additional sheets as necessary.

#### **Aeration Room**

Manufacturer <b>N/A</b>	Model No. <b>N/A</b>	Number of Sources <b>1</b>
Source Designation <b>Source ID 110</b>	Maximum Capacity <b>N/A</b>	Rated Capacity <b>N/A</b>

Type of Material Processed  
**EtO**

#### **Maximum Operating Schedule**

Hours/Day <b>24</b>	Days/Week <b>7</b>	Days/Year <b>365</b>	Hours/Year <b>8,760</b>
------------------------	-----------------------	-------------------------	----------------------------

Operational restrictions existing or requested, if any (e.g., bottlenecks or voluntary restrictions to limit PTE)

#### **Capacity (specify units)**

Per Hour <b>N/A</b>	Per Day <b>N/A</b>	Per Week <b>N/A</b>	Per Year <b>N/A</b>
------------------------	-----------------------	------------------------	------------------------

#### **Operating Schedule**

Hours/Day <b>24</b>	Days/Week <b>7</b>	Days/Year <b>365</b>	Hours/Year <b>8,760</b>
------------------------	-----------------------	-------------------------	----------------------------

Seasonal variations (Months) From to

If variations exist, describe them  
**N/A**

### 2. Fuel – N/A

Type	Quantity Hourly	Annually	Sulfur	% Ash (Weight)	BTU Content
Oil Number _____	GPH @ 60°F	X 10 <sup>3</sup> Gal	% by wt		Btu/Gal. & Lbs./Gal. @ 60 °F
Oil Number _____	GPH @ 60°F	X 10 <sup>3</sup> Gal	% by wt		Btu/Gal. & Lbs./Gal. @ 60 °F
Natural Gas	SCFH	X 10 <sup>6</sup> SCF	grain/100 SCF		Btu/SCF
Gas (other) _____	SCFH	X 10 <sup>6</sup> SCF	grain/100 SCF		Btu/SCF
Coal	TPH	Tons	% by wt		Btu/lb
Other *					
_____					
_____					

\*Note: Describe and furnish information separately for other fuels in Addendum B.

### Section B - Processes Information (Continued)

#### 3. Burner – N/A

Manufacturer	Type and Model No.	Number of Burners
Description:		
Rated Capacity		Maximum Capacity

#### 4. Process Storage Vessels – N/A

##### A. For Liquids:

Name of material stored		
Tank I.D. No.	Manufacturer	Date Installed
Maximum Pressure		Capacity (gallons/Meter <sup>3</sup> )
Type of relief device (pressure set vent/conservation vent/emergency vent/open vent)		
Relief valve/vent set pressure (psig)		Vapor press. of liquid at storage temp. (psia/kPa)
Type of Roof: Describe:		
Total Throughput Per Year		Number of fills per day (fill/day): Filling Rate (gal./min.): Duration of fill hr./fill):

##### B. For Solids

Type: <input type="checkbox"/> Silo <input type="checkbox"/> Storage Bin <input type="checkbox"/> Other, Describe		Name of Material Stored
Silo/Storage Bin I.D. No.	Manufacturer	Date Installed
State whether the material will be stored in loose or bags in silos		Capacity (Tons)
Turn over per year in tons		Turn over per day in tons
Describe fugitive dust control system for loading and handling operations		
Describe material handling system		

#### 5. Request for Confidentiality

Do you request any information on this application to be treated as "Confidential"? ☐ Yes ☒ No  
 If yes, include justification for confidentiality. Place such information on separate pages marked "**confidential**".

## Section B - Processes Information (Continued)

### 6. Miscellaneous Information

Attach flow diagram of process giving all (gaseous, liquid and solid) flow rates. Also, list all raw materials charged to process equipment, and the amounts charged (tons/hour, etc.) at rated capacity (give maximum, minimum and average charges describing fully expected variations in production rates). Indicate (on diagram) all points where contaminants are controlled (location of water sprays, collection hoods, or other pickup points, etc.). Describe collection hoods location, design, airflow and capture efficiency. Describe any restriction requested and how it will be monitored.

***Please refer to Figure 2-2 of the Application Narrative.***

Describe fully the facilities provided to monitor and to record process operating conditions, which may affect the emission of air contaminants. Show that they are reasonable and adequate.

***Please refer to Section C.11.***

Describe each proposed modification to an existing source.

***N/A – B. Braun is not proposing modifications to Source ID 110.***

Identify and describe all fugitive emission points, all relief and emergency valves and any by-pass stacks.

***Please refer to Figure 2-2 of the Application Narrative.***

Describe how emissions will be minimized especially during start up, shut down, process upsets and/or disruptions.

***Please refer to Section C.11.***

Anticipated Milestones:

- i. Expected commencement date of construction/reconstruction/installation: N/A
- ii. Expected completion date of construction/reconstruction/installation: N/A
- iii. Anticipated date of start-up: N/A

## Section C - Air Cleaning Device

### 1. Precontrol Emissions\*

Pollutant	Maximum Emission Rate				Calculation/ Estimation Method	
	Specify Units	Pounds/Hour	Hours/Year	Tons/Year		
PM						
PM <sub>10</sub>						
SO <sub>x</sub>		<b>Please refer to Appendix B – Emissions Inventory.</b>				
CO						
NO <sub>x</sub>						
VOC						
Others: (e.g., HAPs)	-----					-----

\* These emissions must be calculated based on the requested operating schedule and/or process rate, e.g., operating schedule for maximum limits or restricted hours of operation and/or restricted throughput. Describe how the emission values were determined. Attach calculations.

### 2. Gas Cooling – N/A

Water quenching <input type="checkbox"/> Yes <input type="checkbox"/> No    Water injection rate _____ GPM	
Radiation and convection cooling <input type="checkbox"/> Yes <input type="checkbox"/> No	Air dilution <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, _____ CFM
Forced Draft <input type="checkbox"/> Yes <input type="checkbox"/> No	Water cooled duct work <input type="checkbox"/> Yes <input type="checkbox"/> No
Other	
Inlet Volume _____ ACFM @ _____ °F    _____ % Moisture	Outlet Volume _____ ACFM @ _____ °F    _____ % Moisture

Describe the system in detail.



### Section C - Air Cleaning Device (Continued)

<b>3. Settling Chambers – N/A</b>			
Manufacturer		Volume of gas handled _____ACFM @ _____°F	
Gas velocity (ft/sec.)			
Length of chamber (ft.)	Width of chamber (ft.)	Height of chamber (ft.)	Number of trays
Water injection <input type="checkbox"/> Yes <input type="checkbox"/> No		Water injection rate (GPM)	
<b>Emissions Data</b>			
Inlet	Outlet	Removal Efficiency (%)	
<b>4. Inertial and Cyclone Collectors – N/A</b>			
Manufacturer		Type	
Model No.			
Pressure drop (in. of water)		Inlet volume _____ACFM @ _____°F	
Outlet volume _____ACFM @ _____°F			
Number of individual cyclone(s)		Outlet straightening vanes used? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Length of Cyclone(s) Cylinder (ft.)	Diameter of Cyclone(s) Cylinder (ft.)	Length of Cyclone(s) cone (ft.)	
Inlet Diameter (ft.) or duct area (ft. <sup>2</sup> ) of cyclone(s)		Outlet Diameter (ft.) or duct area (ft. <sup>2</sup> ) of cyclone(s)	
If a multi-clone or multi-tube unit is installed, will any of the individual cyclones or cyclone tubes be blanked or blocked off?			
Describe any exhaust gas recirculation loop to be employed.			
Attach particle size efficiency curve			
<b>Emissions Data</b>			
Inlet	Outlet	Removal Efficiency (%)	

### Section C - Air Cleaning Device (Continued)

#### 5. Fabric Collector – N/A

##### Equipment Specifications

Manufacturer		Model No.		<input type="checkbox"/> Pressurized Design <input type="checkbox"/> Suction Design
Number of Compartments	Number of Filters Per Compartment	Is Baghouse Insulated?		
		<input type="checkbox"/> Yes <input type="checkbox"/> No		
Can each compartment be isolated for repairs and/or filter replacement?				<input type="checkbox"/> Yes <input type="checkbox"/> No
Are temperature controls provided? (Describe in detail)				<input type="checkbox"/> Yes <input type="checkbox"/> No
Dew point at maximum moisture _____ °F		Design inlet volume _____ SCFM		
Type of Fabric Material _____ <input type="checkbox"/> Felted <input type="checkbox"/> Membrane Weight _____ oz/sq.yd <input type="checkbox"/> Woven <input type="checkbox"/> Others: List: _____ Thickness _____ in <input type="checkbox"/> Felted-Woven				
Fabric permeability (clean) @ ½" water-Δ P _____ CFM/sq.ft.				
Filter dimensions    Length _____    Diameter/Width _____				
Effective area per filter _____		Maximum operating temperature (°F) _____		
Effective air to cloth ratio      Minimum _____      Maximum _____				
Drawing of Fabric Filter A sketch of the fabric filter showing all access doors, catwalks, ladders and exhaust ductwork, location of each pressure and temperature indicator should be attached.				
<b>Operation and Cleaning</b>				
Volume of gases handled _____ ACFM @ _____ °F		Pressure drop across collector (in. of water). Describe the equipment to be used to monitor the pressure drop.		
Type of filter cleaning <input type="checkbox"/> Manual Cleaning <input type="checkbox"/> Bag Collapse <input type="checkbox"/> Reverse Air Jets <input type="checkbox"/> Mechanical Shakers <input type="checkbox"/> Sonic Cleaning <input type="checkbox"/> Other: _____ <input type="checkbox"/> Pneumatic Shakers <input type="checkbox"/> Reverse Air Flow				
Describe the equipment provided if dry oil free air is required for collector operation				
Cleaning Initiated By <input type="checkbox"/> Timer      Frequency if timer actuated _____ <input type="checkbox"/> Expected pressure drop range _____ in. of water <input type="checkbox"/> Other Specify _____				
Does air cleaning device employ hopper heaters, hopper vibrators or hopper level detectors? If yes, describe.				
Describe the warning/alarm system that protects against operation when the unit is not meeting design requirements.				
<b>Emissions Data</b>				
<b>Pollutant</b>	<b>Inlet</b>	<b>Outlet</b>	<b>Removal Efficiency (%)</b>	

### Section C - Air Cleaning Device (Continued)

#### 6. Wet Collection Equipment – N/A

##### Equipment Specifications

Manufacturer	Type	Model No.	
Design Inlet Volume (SCFM)		Relative Particulate/Gas Velocity (ejector scrubbers only)	
Describe the internal features (e.g., variable throat, gas/liquid diffusion plates, spray nozzles, liquid redistributors, bed limiters, etc.).			
Describe pH monitoring and pH adjustment systems, if applicable.			
Describe mist eliminator or separator (type, configuration, backflush capability, frequency).			
Attach particulate size efficiency curve.			
<b>Operating Parameters</b>			
Inlet volume of gases handled _____ (ACFM) @ _____ °F		Outlet volume of gases handled _____ (ACFM) @ _____ °F _____ % Moisture	
Liquid flow rates. Describe equipment provided to measure liquid flow rates to scrubber (e.g., quenching section, recirculating solution, makeup water, bleed flow, etc.)			
Describe scrubber liquid supply system (amount of make-up and recirculating liquid, capacity of recirculating liquid system, etc.)			
State pressure drop range (in water) across scrubber (e.g., venturi throat, packed bed, etc.) only. Describe the equipment provide to measure the pressure drop. Do not include duct or de-mister losses.			
Describe the warning/alarm system that protects against operation when unit is not meeting design requirements.			
<b>Emissions Data</b>			
<b>Pollutant</b>	<b>Inlet</b>	<b>Outlet</b>	<b>Removal Efficiency (%)</b>

### Section C - Air Cleaning Device (Continued)

#### 7. Electrostatic Precipitator – N/A

##### Equipment Specifications

Manufacturer	Model No.	<input type="checkbox"/> Wet	<input type="checkbox"/> Dry
		<input type="checkbox"/> Single-Stage	<input type="checkbox"/> Two-Stage
Gas distribution grids <input type="checkbox"/> Yes <input type="checkbox"/> No		Design Inlet Volume (SCFM) _____ Maximum operating temperature (°F) _____	
Total collecting surface area _____ sq. ft.		Collector plates size length _____ ft. x width _____ ft.	
Number of fields _____		Number of collector plates/field _____	
Spacing between collector plates _____ inches.			
Maximum gas velocity _____ ft./sec.		Minimum gas treatment time: _____ sec.	
Total discharge electrode length _____ ft.			
Number of discharge electrodes _____		Number of collecting electrode rappers _____	
Rapper control <input type="checkbox"/> Magnetic <input type="checkbox"/> Pneumatic <input type="checkbox"/> Other _____ Describe in detail			

##### Operating Parameters

Inlet gas temperature (°F) _____	State pressure drop range (inches water gauge) across collector only _____
Outlet gas temperature (°F) _____	Describe the equipment
Volume of gas handled (ACFM) _____	Dust resistivity (ohm-cm). Will resistivity vary?

##### Power requirements

Number and size of Transformer Rectifier sets by electrical field			
Field No.	No. of Sets	Each Transformer KVA	Each Rectifier KV Ave./Peak      Ma DC
Current Density _____ Micro amperes/ft <sup>2</sup> .	Corona Power _____ Watts/1000 ACFM	Corona Power Density _____ Watts/ft <sup>2</sup> .	
Will a flue gas conditioning system be employed? If yes, describe it.			
Does air cleaning device employ hopper heaters, hopper vibrators or hopper level detectors? If yes, describe.			
Describe the warning/alarm system that protects against operation when unit is not meeting design requirements.			
<b>Emissions Data</b>			
Pollutant	Inlet	Outlet	Removal Efficiency (%)

### Section C - Air Cleaning Device (Continued)

#### 8. Adsorption Equipment – N/A

##### Equipment Specifications

Manufacturer	Type	Model No.	
Design Inlet Volume (SCFM)		Adsorbent charge per adsorber vessel and number of adsorber vessels	
Length of Mass Transfer Zone (MTZ), supplied by the manufacturer based upon laboratory data.			
Adsorber diameter (ft.) and area ft <sup>2</sup> .)		Adsorption bed depth (ft.)	
<b>Adsorbent information</b>			
Adsorbent type and physical properties.			
Working capacity of adsorbent (%)		Heel percent or unrecoverable solvent weight % in the adsorbent after regeneration.	
<b>Operating Parameters</b>			
Inlet volume of gases handled _____ (ACFM) @ _____ °F			
Adsorption time per adsorption bed		Breakthrough capacity: Lbs. of solvent / 100 lbs. of adsorbent = _____	
Vapor pressure of solvents at the inlet temperature		Available steam in pounds to regenerate carbon adsorber (if applicable)	
Percent relative saturation of each solvent at the inlet temperature			
Attach any additional data including auxiliary equipment and operation details to thoroughly evaluate the control equipment.			
Describe the warning/alarm system that protects against operation when unit is not meeting design requirements.			
<b>Emissions Data</b>			
Pollutant	Inlet	Outlet	Removal Efficiency (%)

### Section C - Air Cleaning Device (Continued)

#### 9. Absorption Equipment – N/A

##### Equipment Specifications

Manufacturer	Type	Model No.	
Design Inlet Volume (SCFM)		Tower height (ft.) and inside diameter (ft.)	
Packing type and size (if applicable)		Height of packing (ft.) (if applicable)	
Number of trays (if applicable)		Number of bubble caps (if applicable)	
Configuration <input type="checkbox"/> Counter-current <input type="checkbox"/> Cross flow <input type="checkbox"/> Cocurrent flow			
Describe pH and/or other monitoring and controls.			
<b>Absorbent information</b>			
Absorbent type and concentration.		Retention time (sec.)	
Attach equilibrium data for absorption (if applicable)			
Attach any additional information regarding auxiliary equipment, absorption solution supply system (once through or recirculating, system capacity, etc.) to thoroughly evaluate the control equipment. Indicate the flow rates for makeup, bleed and recirculation.			
<b>Operating Parameters</b>			
Volume of gas handled (ACFM)	Inlet temperature (°F)	Pressure drop (in. of water) and liquid flow rate. Describe the monitoring equipment.	
State operating range for pH and/or absorbent concentration in scrubber liquid.			
Describe the warning/alarm system that protects against operation when unit is not meeting design requirements.			
<b>Emissions Data</b>			
<b>Pollutant</b>	<b>Inlet</b>	<b>Outlet</b>	<b>Removal Efficiency (%)</b>

### Section C - Air Cleaning Device (Continued)

10. ☐ Selective Catalytic Reduction (SCR) – N/A  
☐ Selective Non-Catalytic Reduction (SNCR) – N/A  
☐ Non-Selective Catalytic Reduction (NSCR) – N/A

#### Equipment Specifications

Manufacturer	Type	Model No.
--------------	------	-----------

Design Inlet Volume (SCFM)	Design operating temperature (°F)
----------------------------	-----------------------------------

Is the system equipped with process controls for proper mixing/control of the reducing agent in gas stream? If yes, give details.

Attach efficiency and other pertinent information (e.g., ammonia slip)

#### Operating Parameters

Volume of gases handled \_\_\_\_\_ (ACFM) @ \_\_\_\_\_ °F

Operating temperature range for the SCR/SNCR/NSCR system (°F) From \_\_\_\_\_ °F To \_\_\_\_\_ °F

Reducing agent used, if any	Oxidation catalyst used, if any
-----------------------------	---------------------------------

State expected range of usage rate and concentration.

Service life of catalyst	Ammonia slip (ppm)
--------------------------	--------------------

Describe fully with a sketch giving locations of equipment, controls systems, important parameters and method of operation.

Describe the warning/alarm system that protects against operation when unit is not meeting design requirements.

#### Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)

## Section C - Air Cleaning Device (Continued)

## 11. Oxidizer/Afterburners

## Equipment Specifications

Manufacturer <b>Anguil Environmental Systems, Inc.</b>	Type <input type="checkbox"/> Thermal <input checked="" type="checkbox"/> Catalytic	Model No. <b>Custom</b>	
Design Inlet Volume (SCFM) <b>15,000 SCFM</b>	Combustion chamber dimensions (length, cross-sectional area, effective chamber volume, etc.) <b>Volume: 958 ft<sup>3</sup></b>		
Describe design features, which will ensure mixing in combustion chamber. <b>Mixing is accomplished by a profile plate around the burner which accelerates the air around the burner opening, mixing the air with the burner flame while also keeping the burner cool.</b>			
Describe method of preheating incoming gases (if applicable). <b>Incoming gases are preheated via the use of a shell and tube heat exchanger.</b>		Describe heat exchanger system used for heat recovery (if applicable). <b>A shell and tube heat exchanger is used to preheat the incoming gases to the oxidizer. It is constructed out of 304 stainless steel and is comprised of 3,360 tubes, each with 5/8 in. outer diameter, 0.035 in. wall thickness, and 90 in. length. The heat exchanger accommodates two passes on the shell side and a single tube pass, resulting in 65% nominal heat exchange efficiency.</b>	
Catalyst used <b>CARULITE 500 pelletized catalyst</b>	Life of catalyst <b>Catalyst will be removed and replaced at a minimum every five years pursuant to 40 CFR §63.363(b)(4)(iii).</b>	Expected temperature rise across catalyst (°F) <b>272 °F</b>	Dimensions of bed (in inches). Height: <u>120 in</u> Diameter or Width: <u>66 in</u> Depth: <u>9 in</u>
Are temperature sensing devices being provided to measure the temperature rise across the catalyst? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If yes, describe. <b>Each catalyst bed (3 catalyst beds total) has a temperature indication inside of the catalyst bed. A catalyst inlet thermocouple is used to control the inlet temperature to the catalyst via the burner and the heat exchanger bypass damper to ensure compliance with the manufacturer's minimum temperature recommendations in accordance with 40 CFR §63.363(b)(3). The catalyst outlet temperature is monitored in accordance with 40 CFR §63.364(c), and fresh air is added as necessary to ensure the temperature remains within the manufacturer recommendations.</b>			



Describe any temperature sensing and/or recording devices (including specific location of temperature probe in a drawing or sketch).

**All temperature-sensing devices are type K thermocouples. Temperature sensing at the catalytic oxidizer is conducted at the oxidizer outlet.**

#### Burner Information

Burner Manufacturer <b>Eclipse</b>	Model No. <b>240 RAH</b>	Fuel Used <b>Natural gas</b>
Number and capacity of burners <b>One 3.0 MMBtu/hr burner</b>	Rated capacity (each) <b>3.0 MMBtu/hr</b>	Maximum capacity (each) <b>3.0 MMBtu/hr</b>

Describe the operation of the burner

**The burner is used to heat the catalytic oxidizer air stream to maintain a minimum inlet temperature to the catalyst. A control thermocouple downstream of the catalyst controls the natural gas and combustion air valves upstream of the burner control air/fuel ratio via PLC control. The burner is initially lit via an intermittent pilot.**

Attach dimensioned diagram of afterburner

**Refer to Appendix C.**

#### Operating Parameters

Inlet flow rate (ACFM) <b>15,600</b> @ <b>101</b> °F	Outlet flow rate (ACFM) <b>27,360 ACFM</b> @ <b>384</b> °F
State pressure drop range across catalytic bed (in. of water). <b>3.9 in. W.C. – 14.5 in. W.C.</b>	Describe the method adopted for regeneration or disposal of the used catalyst. <b>Catalyst will be removed and replaced at a minimum every five years and disposed of according to federal, state, and local requirements.</b>

Describe the warning/alarm system that protects against operation when unit is not meeting design requirements.

**The oxidizer is built in accordance with applicable NFPA 86 and FM 6-11 standards with appropriate safety shutdowns as outlined in these standards.**

#### Emissions Data

Pollutant	Inlet	Outlet	Removal Efficiency (%)
<b>EtO <sup>(a)</sup></b>	<b>195 tons per year (tpy)</b>	<b>1.95 tpy</b>	<b>99%</b>

<sup>(a)</sup> Long term emissions rates have been provided above for completeness purposes. For more detailed information related to the Anguil System control efficiency, refer to Table 2 of Appendix B.

### Section C - Air Cleaning Device (Continued)

#### 12. Flares – N/A

##### Equipment Specifications

Manufacturer	Type <input type="checkbox"/> Elevated flare <input type="checkbox"/> Ground flare <input type="checkbox"/> Other _____ Describe	Model No.	
Design Volume (SCFM)	Dimensions of stack (ft.) Diameter _____ Height _____		
Residence time (sec.) and outlet temperature (°F)	Turn down ratio	Burner details	
Describe the flare design (air/steam-assisted or nonassisted), essential auxiliaries including pilot flame monitor of proposed flare with a sketch.			
Describe the operation of the flare's ignition system.			
Describe the provisions to introduce auxiliary fuel to the flare.			
<b>Operation Parameters</b>			
Detailed composition of the waste gas	Heat content	Exit velocity	
Maximum and average gas flow burned (ACFM)	Operating temperature (°F)		
Describe the warning/alarm system that protects against operation when unit is not meeting design requirements.			
<b>Emissions Data</b>			
<b>Pollutant</b>	<b>Inlet</b>	<b>Outlet</b>	<b>Removal Efficiency (%)</b>

### Section C - Air Cleaning Device (Continued)

#### 13. Other Control Equipment – N/A

##### Equipment Specifications

Manufacturer	Type	Model No.	
Design Volume (SCFM)		Capacity	
Describe pH monitoring and pH adjustment, if any.			
Indicate the liquid flow rate and describe equipment provided to measure pressure drop and flow rate, if any.			
Attach efficiency curve and/or other efficiency information.			
Attach any additional data including auxiliary equipment and operation details to thoroughly evaluate the control equipment.			
<b>Operation Parameters</b>			
Volume of gas handled _____ ACFM @ _____ °F _____ % Moisture			
Describe fully giving important parameters and method of operation.			
Describe the warning/alarm system that protects against operation when unit is not meeting design requirements.			
<b>Emissions Data</b>			
<b>Pollutant</b>	<b>Inlet</b>	<b>Outlet</b>	<b>Removal Efficiency (%)</b>

### Section C - Air Cleaning Device (Continued)

#### 14. Costs

Indicate cost associated with air cleaning device and its operating cost (attach documentation if necessary)

Device	Direct Cost	Indirect Cost	Total Cost	Annual Operating Cost
<b>Catalytic oxidizer</b>	<b>\$1,380,640</b>	<b>\$634,195</b>	<b>\$2,014,835</b>	<b>\$169,243</b>

#### 15. Miscellaneous

Describe in detail the removal, handling and disposal of dust, effluent, etc. from the air cleaning device including proposed methods of controlling fugitive emissions.

**N/A**

Attach manufacturer's performance guarantees and/or warranties for each of the major components of the control system (or complete system).

***The manufacturer's specification sheet is included within Appendix C.***

Attach the maintenance schedule for the control equipment and any part of the process equipment that if in disrepair would increase air contaminant emissions.

***The control device will be maintained in accordance with the manufacturer's maintenance schedule.***

### Section D - Additional Information

Will the construction, modification, etc. of the sources covered by this application increase emissions from other sources at the facility? If so, describe and quantify.

**No – emissions from other sources at the Facility will not increase.**

If this project is subject to any one of the following, attach a demonstration to show compliance with applicable standards.

- |   |   |  |
|---|---|--|
| a. Prevention of Significant Deterioration permit (PSD), 40 CFR 52?   | <input type="checkbox"/> YES            | <input checked="" type="checkbox"/> NO |
| b. New Source Review (NSR), 25 Pa. Code Chapter 127, Subchapter E?  | <input type="checkbox"/> YES            | <input checked="" type="checkbox"/> NO |
| c. New Source Performance Standards (NSPS), 40 CFR Part 60?<br>(If Yes, which subpart) _____                            | <input type="checkbox"/> YES            | <input checked="" type="checkbox"/> NO |
| d. National Emissions Standards for Hazardous Air Pollutants (NESHAP),<br>40 CFR Part 61? (If Yes, which subpart) _____ | <input type="checkbox"/> YES            | <input checked="" type="checkbox"/> NO |
| e. Maximum Achievable Control Technology (MACT) 40 CFR Part 63?<br>(If Yes, which part) <u><b>Subpart O</b></u>         | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO            |

Attach a demonstration showing that the emissions from any new sources will be the minimum attainable through the use of best available technology (BAT).

**Please refer to the application narrative. B. Braun is not proposing to install or operate a new emissions source as part of this project.**

Provide emission increases and decreases in allowable (or potential) and actual emissions within the last five (5) years for applicable PSD pollutant(s) if the facility is an existing major facility (PSD purposes).

**N/A**

## Section D - Additional Information (Continued) – N/A

Indicate emission increases and decreases in tons per year (tpy), for volatile organic compounds (VOCs) and nitrogen oxides (NOx) for NSR applicability since January 1, 1991 or other applicable dates (see other applicable dates in instructions). The emissions increases include all emissions including stack, fugitive, material transfer, other emission generating activities, quantifiable emissions from exempted source(s), etc.

[illegible]

If the source is subject to 25 Pa. Code Chapter 127, Subchapter E, New Source Review requirements,

- a. Identify Emission Reduction Credits (ERCs) for emission offsets or demonstrate ability to obtain suitable ERCs for emission offsets.
- b. Provide a demonstration that the lowest achievable emission rate (LAER) control techniques will be employed (if applicable).
- c. Provide an analysis of alternate sites, sizes, production processes and environmental control techniques demonstrating that the benefits of the proposed source outweigh the environmental and social costs (if applicable).

Attach calculations and any additional information necessary to thoroughly evaluate compliance with all the applicable requirements of Article III and applicable requirements of the Clean Air Act adopted thereunder. The Department may request additional information to evaluate the application such as a standby plan, a plan for air pollution emergencies, air quality modeling, etc.

## Section E - Compliance Demonstration

**Note: Complete this section if source is not a Title V facility. Title V facilities must complete Addendum A.**

**Method of Compliance Type:** Check all that apply and complete all appropriate sections below

- ☒ Monitoring
 ☒ Testing
 ☒ Reporting  
☒ Recordkeeping
 ☒ Work Practice Standard

**Monitoring:**

- a. Monitoring device type (Parameter, CEM, etc): **Parameter**
- b. Monitoring device location: **Outlet to the catalyst bed**
- c. Describe all parameters being monitored along with the frequency and duration of monitoring each parameter:  
***Oxidation temperature at the outlet to the catalyst bed will be monitored on a continuous basis pursuant to 40 CFR §63.364(c).***

**Testing:**

- a. Reference Test Method: Citation
- b. Reference Test Method: Description

***B. Braun will complete initial testing requirements pursuant to 40 CFR §63.363.***

**Recordkeeping:**

Describe what parameters will be recorded and the recording frequency:

***Oxidation temperature at the outlet to the catalyst bed will be monitored pursuant to 40 CFR §63.364(c) and recorded.***

***B. Braun will record ethylene oxide throughput monthly and calculate emissions on a monthly and 12-month rolling basis.***

**Reporting:**

- a. Describe what is to be reported and frequency of reporting:

***All reporting is completed pursuant to 40 CFR §63.366. All data is maintained for a period of five years.***

- b. Reporting start date: ***B. Braun currently reports pursuant to 40 CFR §63.366 and will continue to do so.***

**Work Practice Standard:**

Describe each:

***The catalyst bed will be replaced with new catalyst material every five years in accordance with 40 CFR §63.363(b)(4)(iii).***

## Section F - Flue and Air Contaminant Emission

### 1. Estimated Atmospheric Emissions\*

Pollutant	Maximum emission rate			Calculation/ Estimation Method
	specify units	lbs/hr	tons/yr.	
PM				
PM <sub>10</sub>				
SO <sub>x</sub>		<b>Please refer to Appendix B – Emissions Inventory.</b>		
CO				
NO <sub>x</sub>				
VOC				
Others: ( e.g., HAPs)	-----			

\* These emissions must be calculated based on the requested operating schedule and/or process rate e.g., operating schedule for maximum limits or restricted hours of operation and /or restricted throughput. Describe how the emission values were determined. Attach calculations.

### 2. Stack and Exhauster

Stack Designation/Number **New Catalytic Oxidizer Stack**

List Source(s) or source ID exhausted to this stack:

**101, 102, 103, 104, 105, 106, 107, 108, 110**

% of flow exhausted to stack: **100%**

Stack height above grade (ft.) **50 ft**

Grade elevation (ft.) **375 ft**

Stack diameter (ft) or Outlet duct area (sq. ft.)

**3.5 ft**

f. Weather Cap

☐ YES ☒ NO

Distance of discharge to nearest property line (ft.). Locate on topographic map.

**240 ft**

Does stack height meet Good Engineering Practice (GEP)?

**Yes**

If modeling (estimating) of ambient air quality impacts is needed, attach a site plan with buildings and their dimensions and other obstructions.

Location of stack** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	<b>40</b>	<b>38</b>	<b>30.41</b>	<b>-75</b>	<b>26</b>	<b>51.04</b>

Stack exhaust

Volume **27,360** ACFM

Temperature **384** °F

Moisture **2.46 – 2.82** %

Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.

**Refer to Appendix C.**

Exhauster (attach fan curves) **2** in. of water **75** HP @ **1,200** RPM.

\*\* If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.



<b>2. Stack and Exhauster</b>						
Stack Designation/Number <b>S23 – Existing Common Rear Sterilizer Exhaust Stack</b>						
List Source(s) or source ID exhausted to this stack: <b>101, 102, 103, 104, 105, 106, 107, 108</b>				% of flow exhausted to stack: <b>100%</b>		
Stack height above grade (ft.) <b>9 ft</b> Grade elevation (ft.) <b>375 ft</b>		Stack diameter (ft) or Outlet duct area (sq. ft.) <b>2.08 ft</b>			f. Weather Cap <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	
Distance of discharge to nearest property line (ft.). Locate on topographic map. <b>240 ft</b>						
Does stack height meet Good Engineering Practice (GEP)? <b>N/A</b>						
If modeling (estimating) of ambient air quality impacts is needed, attach a site plan with buildings and their dimensions and other obstructions.						
Location of stack** Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	<b>40</b>	<b>38</b>	<b>30.41</b>	<b>-75</b>	<b>26</b>	<b>51.04</b>
Stack exhaust Volume <b>&lt;15,000</b> ACFM      Temperature <b>~126</b> °F      Moisture <b>~50</b> %						
Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions. <b>Refer to Appendix C.</b>						
Exhauster (attach fan curves) <b>Unknown</b> _____ in. of water <b>7.5</b> _____ HP @ <b>1,760</b> _____ RPM.						
** If the data and collection method codes differ from those provided on the General Information Form-Authorization Application, provide the additional detail required by that form on a separate form.						

## Section G - Attachments

Number and list all attachments submitted with this application below:

***Application Narrative***

***Appendix A – PADEP Application Forms***

***Appendix B – Emissions Inventory***

***Appendix C – Control Device Specification Sheets***

***Appendix D – Municipal Notification Letters***

Form



COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

## GENERAL INFORMATION FORM – AUTHORIZATION APPLICATION

Before completing this General Information Form (GIF), read the step-by-step instructions provided in this application package. This version of the General Information Form (GIF) must be completed and returned with any program-specific application being submitted to the Department.

Related ID#s (If Known)		DEP USE ONLY
Client ID# <u>94048</u>	APS ID# _____	Date Received & General Notes
Site ID# <u>487149</u>	Auth ID# _____	
Facility ID# <u>514477</u>		

### CLIENT INFORMATION

DEP Client ID# <b>94048</b>	Client Type / Code <b>PACOR</b>			
Organization Name or Registered Fictitious Name <b>B. Braun Medical Inc.</b>		Employer ID# (EIN) <b>23-2116774</b>	Dun & Bradstreet ID# <b>00-239-7347</b>	
Individual Last Name	First Name	MI	Suffix	SSN
Additional Individual Last Name	First Name	MI	Suffix	SSN
Mailing Address Line 1 <b>901 Marcon Blvd.</b>		Mailing Address Line 2		
Address Last Line – City <b>Allentown</b>		State <b>PA</b>	ZIP+4 <b>18109</b>	Country <b>USA</b>
Client Contact Last Name <b>Geder</b>	First Name <b>Eric</b>	MI	Suffix	
Client Contact Title <b>EH&amp;S Manager</b>		Phone <b>(484) 240-8817</b>	Ext	
Email Address <b>Eric.Geder@bbraunusa.com</b>		FAX		

### SITE INFORMATION

DEP Site ID# <b>487149</b>	Site Name <b>B. Braun Medical Inc.</b>			
EPA ID# <b>PAD 982 679 169</b>	Estimated Number of Employees to be Present at Site			<b>&gt;500</b>
Description of Site <b>56.3-acre medical device manufacturing site within an industrial park</b>				
County Name <b>Lehigh</b>	Municipality <b>Hanover</b>	City <input type="checkbox"/>	Boro <input type="checkbox"/>	Twp <input checked="" type="checkbox"/>
County Name	Municipality	City <input type="checkbox"/>	Boro <input type="checkbox"/>	Twp <input type="checkbox"/>
Site Location Line 1 <b>901 Marcon Blvd.</b>		Site Location Line 2		
Site Location Last Line – City <b>Allentown</b>		State <b>PA</b>	ZIP+4 <b>18109</b>	
Detailed Written Directions to Site <b>Interstate 78, US 22 to 987 North to Postal Road to Marcon Blvd.</b>				
Site Contact Last Name <b>Geder</b>	First Name <b>Eric</b>	MI	Suffix	
Site Contact Title <b>EH&amp;S Manager</b>		Site Contact Firm <b>B. Braun Medical Inc.</b>		
Mailing Address Line 1 <b>901 Marcon Blvd.</b>		Mailing Address Line 2		
Mailing Address Last Line – City <b>Allentown</b>		State <b>PA</b>	ZIP+4 <b>18109</b>	

Phone <b>(484) 240-8817</b>	Ext	FAX	Email Address <b>Eric.Geder@bbraunusa.com</b>
NAICS Codes (Two- & Three-Digit Codes – List All That Apply)			6-Digit Code (Optional) <b>339112</b>

Client to Site Relationship  
**Owner/Operator****FACILITY INFORMATION**

<b>Modification of Existing Facility</b>	<b>Yes</b>	<b>No</b>
1. Will this project modify an existing facility, system, or activity?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Will this project involve an addition to an existing facility, system, or activity?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<i>If "Yes", check all relevant facility types and provide DEP facility identification numbers below.</i>		

Facility Type	DEP Fac ID#	Facility Type	DEP Fac ID#
<input checked="" type="checkbox"/> Air Emission Plant	<b>514477</b>	<input type="checkbox"/> Industrial Minerals Mining Operation	
<input type="checkbox"/> Beneficial Use (water)		<input type="checkbox"/> Laboratory Location	
<input type="checkbox"/> Blasting Operation		<input type="checkbox"/> Land Recycling Cleanup Location	
<input type="checkbox"/> Captive Hazardous Waste Operation		<input type="checkbox"/> Mine Drainage Trmt/Land Recy Proj Location	
<input type="checkbox"/> Coal Ash Beneficial Use Operation		<input type="checkbox"/> Municipal Waste Operation	
<input type="checkbox"/> Coal Mining Operation		<input type="checkbox"/> Oil & Gas Encroachment Location	
<input type="checkbox"/> Coal Pillar Location		<input type="checkbox"/> Oil & Gas Location	
<input type="checkbox"/> Commercial Hazardous Waste Operation		<input type="checkbox"/> Oil & Gas Water Poll Control Facility	
<input type="checkbox"/> Dam Location		<input type="checkbox"/> Oil & Gas Wastewater Storage Impoundment	
<input type="checkbox"/> Deep Mine Safety Operation -Anthracite		<input type="checkbox"/> Public Water Supply System	
<input type="checkbox"/> Deep Mine Safety Operation -Bituminous		<input type="checkbox"/> Radiation Facility	
<input type="checkbox"/> Deep Mine Safety Operation -Ind Minerals		<input type="checkbox"/> Residual Waste Operation	
<input type="checkbox"/> Encroachment Location (water, wetland)		<input type="checkbox"/> Storage Tank Location	
<input type="checkbox"/> Erosion & Sediment Control Facility		<input type="checkbox"/> Water Pollution Control Facility	
<input type="checkbox"/> Explosive Storage Location		<input type="checkbox"/> Water Resource	
		<input type="checkbox"/> Other:	

Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
<b>Center of Facility</b>	<b>40</b>	<b>38</b>	<b>30.41</b>	<b>-75</b>	<b>26</b>	<b>51.04</b>
<b>Horizontal Accuracy Measure</b>	Feet			--or-- Meters		
<b>Horizontal Reference Datum Code</b>	<input checked="" type="checkbox"/> North American Datum of 1927 <input type="checkbox"/> North American Datum of 1983 <input type="checkbox"/> World Geodetic System of 1984					

**Horizontal Collection Method Code****Reference Point Code**

<b>Altitude</b>	Feet	<b>375</b>	--or--	Meters
<b>Altitude Datum Name</b>	<input type="checkbox"/> The National Geodetic Vertical Datum of 1929 <input type="checkbox"/> The North American Vertical Datum of 1988 (NAVD88)			

**Altitude (Vertical) Location Datum Collection Method Code****Geometric Type Code****Data Collection Date**

<b>Source Map Scale Number</b>	Inch(es)	=	Feet
--or--	Centimeter(s)	=	Meters

**PROJECT INFORMATION****Project Name****Sterilization Control Device Plan Approval Application****Project Description****Replacment of the existing Catalytic Oxidizer (Control Device ID C001) and Wet Scrubber Deoxx Unit (Control Device ID C002) and installation of one new Anguil System control device to voluntarily reduce ethylene oxide (EtO) emissions associated with the sterilization process.**

<b>Project Consultant Last Name</b> <b>Lynch</b>	<b>First Name</b> <b>Christina</b>	<b>MI</b> <b>R</b>	<b>Suffix</b>
<b>Project Consultant Title</b> <b>Project Manager</b>	<b>Consulting Firm</b> <b>ALL4 LLC</b>		

Mailing Address Line 1  
2393 Kimberton Road

Mailing Address Line 2  
P.O. Box 299

Address Last Line – City  
Kimberton

State  
PA

ZIP+4  
19442

Phone  
(610) 933-5246

Ext  
135

FAX  
(610) 933-5127

Email Address  
clynch@all4inc.com

Time Schedules  
01/2020

Project Milestone (Optional)  
Construction commencement

05/2020

Construction completion

05/2020

Startup

1. Have you informed the surrounding community and addressed any concerns prior to submitting the application to the Department? ☒ Yes ☐ No

2. Is your project funded by state or federal grants? ☐ Yes ☒ No

**Note:** If "Yes", specify what aspect of the project is related to the grant and provide the grant source, contact person and grant expiration date.

Aspect of Project Related to Grant

Grant Source: \_\_\_\_\_

Grant Contact Person: \_\_\_\_\_

Grant Expiration Date: \_\_\_\_\_

3. Is this application for an authorization on Appendix A of the Land Use Policy? (For referenced list, see Appendix A of the Land Use Policy attached to GIF instructions) ☐ Yes ☒ No

**Note:** If "No" to Question 3, the application is not subject to the Land Use Policy.

If "Yes" to Question 3, the application is subject to this policy and the Applicant should answer the additional questions in the Land Use Information section.

### LAND USE INFORMATION – N/A

**Note:** Applicants are encouraged to submit copies of local land use approvals or other evidence of compliance with local comprehensive plans and zoning ordinances.

1. Is there an adopted county or multi-county comprehensive plan? ☐ Yes ☐ No

2. Is there an adopted municipal or multi-municipal comprehensive plan? ☐ Yes ☐ No

3. Is there an adopted county-wide zoning ordinance, municipal zoning ordinance or joint municipal zoning ordinance? ☐ Yes ☐ No

**Note:** If the Applicant answers "No" to either Questions 1, 2 or 3, the provisions of the PA MPC are not applicable and the Applicant does not need to respond to questions 4 and 5 below.

If the Applicant answers "Yes" to questions 1, 2 and 3, the Applicant should respond to questions 4 and 5 below.

4. Does the proposed project meet the provisions of the zoning ordinance or does the proposed project have zoning approval? If zoning approval has been received, attach documentation. ☐ Yes ☐ No

5. Have you attached Municipal and County Land Use Letters for the project? ☐ Yes ☐ No

## COORDINATION INFORMATION

**Note:** The PA Historical and Museum Commission must be notified of proposed projects in accordance with DEP Technical Guidance Document 012-0700-001 and the accompanying Cultural Resource Notice Form.

**If the activity will be a mining project** (i.e., mining of coal or industrial minerals, coal refuse disposal and/or the operation of a coal or industrial minerals preparation/processing facility), respond to questions 1.0 through 2.5 below.

**If the activity will not be a mining project**, skip questions 1.0 through 2.5 and begin with question 3.0.

<b>1.0</b>	<b>Is this a coal mining project?</b> If "Yes", respond to 1.1-1.6. If "No", skip to Question 2.0.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
<b>1.1</b>	<b>Will this coal mining project involve coal preparation/ processing activities in which the total amount of coal prepared/processed will be equal to or greater than 200 tons/day?</b>	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
<b>1.2</b>	<b>Will this coal mining project involve coal preparation/ processing activities in which the total amount of coal prepared/processed will be greater than 50,000 tons/year?</b>	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
<b>1.3</b>	<b>Will this coal mining project involve coal preparation/ processing activities in which thermal coal dryers or pneumatic coal cleaners will be used?</b>	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
<b>1.4</b>	<b>For this coal mining project, will sewage treatment facilities be constructed and treated waste water discharged to surface waters?</b>	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
<b>1.5</b>	<b>Will this coal mining project involve the construction of a permanent impoundment meeting one or more of the following criteria: (1) a contributory drainage area exceeding 100 acres; (2) a depth of water measured by the upstream toe of the dam at maximum storage elevation exceeding 15 feet; (3) an impounding capacity at maximum storage elevation exceeding 50 acre-feet?</b>	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
<b>1.6</b>	<b>Will this coal mining project involve underground coal mining to be conducted within 500 feet of an oil or gas well?</b>	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
<b>2.0</b>	<b>Is this a non-coal (industrial minerals) mining project?</b> If "Yes", respond to 2.1-2.6. If "No", skip to Question 3.0.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
<b>2.1</b>	<b>Will this non-coal (industrial minerals) mining project involve the crushing and screening of non-coal minerals other than sand and gravel?</b>	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
<b>2.2</b>	<b>Will this non-coal (industrial minerals) mining project involve the crushing and/or screening of sand and gravel with the exception of wet sand and gravel operations (screening only) and dry sand and gravel operations with a capacity of less than 150 tons/hour of unconsolidated materials?</b>	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
<b>2.3</b>	<b>Will this non-coal (industrial minerals) mining project involve the construction, operation and/or modification of a portable non-metallic (i.e., non-coal) minerals processing plant under the authority of the General Permit for Portable Non-metallic Mineral Processing Plants (i.e., BAQ-PGPA/GP-3)?</b>	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
<b>2.4</b>	<b>For this non-coal (industrial minerals) mining project, will sewage treatment facilities be constructed and treated waste water discharged to surface waters?</b>	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
<b>2.5</b>	<b>Will this non-coal (industrial minerals) mining project involve the construction of a permanent impoundment meeting one or more of the following criteria: (1) a contributory drainage area exceeding 100 acres; (2) a depth of water measured by the upstream toe of the dam at maximum storage elevation exceeding 15 feet; (3) an impounding capacity at maximum storage elevation exceeding 50 acre-feet?</b>	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No

3.0	Will your project, activity, or authorization have anything to do with a well related to oil or gas production, have construction within 200 feet of, affect an oil or gas well, involve the waste from such a well, or string power lines above an oil or gas well? If "Yes", respond to 3.1-3.3. If "No", skip to Question 4.0.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
3.1	Does the oil- or gas-related project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a watercourse, floodway or body of water (including wetlands)?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
3.2	Will the oil- or gas-related project involve discharge of industrial wastewater or stormwater to a dry swale, surface water, ground water or an existing sanitary sewer system or storm water system? If "Yes", discuss in <i>Project Description</i> .	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
3.3	Will the oil- or gas-related project involve the construction and operation of industrial waste treatment facilities?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
4.0	Will the project involve a construction activity that results in earth disturbance? If "Yes", specify the total disturbed acreage. 4.0.1 Total Disturbed Acreage <i>Negligible</i>	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
5.0	Does the project involve any of the following? If "Yes", respond to 5.1-5.3. If "No", skip to Question 6.0.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
5.1	Water Obstruction and Encroachment Projects – Does the project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a watercourse, floodway or body of water?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
5.2	Wetland Impacts – Does the project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a wetland?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
5.3	Floodplain Projects by the commonwealth, a Political Subdivision of the commonwealth or a Public Utility – Does the project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a floodplain?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
6.0	Will the project involve discharge of stormwater or wastewater from an industrial activity to a dry swale, surface water, ground water or an existing sanitary sewer system or separate storm water system?	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
7.0	Will the project involve the construction and operation of industrial waste treatment facilities?	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
8.0	Will the project involve construction of sewage treatment facilities, sanitary sewers, or sewage pumping stations? If "Yes", indicate estimated proposed flow (gal/day). Also, discuss the sanitary sewer pipe sizes and the number of pumping stations/treatment facilities/name of downstream sewage facilities in the <i>Project Description</i> , where applicable. 8.0.1 Estimated Proposed Flow (gal/day)	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
9.0	Will the project involve the subdivision of land, or the generation of 800 gpd or more of sewage on an existing parcel of land or the generation of an additional 400 gpd of sewage on an already-developed parcel, or the generation of 800 gpd or more of industrial wastewater that would be discharged to an existing sanitary sewer system? 9.0.1 Was Act 537 sewage facilities planning submitted and approved by DEP? If "Yes" attach the approval letter. Approval required prior to 105/NPDES approval.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
10.0	Is this project for the beneficial use of biosolids for land application within Pennsylvania? If "Yes" indicate how much (i.e. gallons or dry tons per year). 10.0.1 Gallons Per Year (residential septage) _____ 10.0.2 Dry Tons Per Year (biosolids) _____	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No

11.0	Does the project involve construction, modification or removal of a dam? If "Yes", identify the dam.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
11.0.1	Dam Name				
12.0	Will the project interfere with the flow from, or otherwise impact, a dam? If "Yes", identify the dam.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
12.0.1	Dam Name				
13.0	Will the project involve operations (excluding during the construction period) that produce air emissions (i.e., NOX, VOC, etc.)? If "Yes", identify each type of emission followed by the amount of that emission.	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
13.0.1	Enter all types & amounts of emissions; separate each set with semicolons. See Appendix B.				
14.0	Does the project include the construction or modification of a drinking water supply to serve 15 or more connections or 25 or more people, at least 60 days out of the year? If "Yes", check all proposed sub-facilities.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
14.0.1	Number of Persons Served				
14.0.2	Number of Employee/Guests				
14.0.3	Number of Connections				
14.0.4	Sub-Fac: Distribution System	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
14.0.5	Sub-Fac: Water Treatment Plant	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
14.0.6	Sub-Fac: Source	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
14.0.7	Sub-Fac: Pump Station	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
14.0.8	Sub Fac: Transmission Main	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
14.0.9	Sub-Fac: Storage Facility	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
15.0	Will your project include infiltration of storm water or waste water to ground water within one-half mile of a public water supply well, spring or infiltration gallery?	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
16.0	Is your project to be served by an existing public water supply? If "Yes", indicate name of supplier and attach letter from supplier stating that it will serve the project.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
16.0.1	Supplier's Name				
16.0.2	Letter of Approval from Supplier is Attached	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
17.0	Will this project involve a new or increased drinking water withdrawal from a stream or other water body? If "Yes", should reference both Water Supply and Watershed Management.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
17.0.1	Stream Name				
18.0	Will the construction or operation of this project involve treatment, storage, reuse, or disposal of waste? If "Yes", indicate what type (i.e., hazardous, municipal (including infectious & chemotherapeutic), residual) and the amount to be treated, stored, re-used or disposed.	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
18.0.1	Type & Amount Catalyst Bed Replacement				
19.0	Will your project involve the removal of coal, minerals, etc. as part of any earth disturbance activities?	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
20.0	Does your project involve installation of a field constructed underground storage tank? If "Yes", list each Substance & its Capacity. <b>Note:</b> Applicant may need a Storage Tank Site Specific Installation Permit.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
20.0.1	Enter all substances & capacity of each; separate each set with semicolons.				
21.0	Does your project involve installation of an aboveground storage tank greater than 21,000 gallons capacity at an existing facility? If "Yes", list each Substance & its Capacity. <b>Note:</b> Applicant may need a Storage Tank Site Specific Installation Permit.	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
21.0.1	Enter all substances & capacity of each; separate each set with semicolons.				



- 22.0 Does your project involve installation of a tank greater than 1,100 gallons which will contain a highly hazardous substance as defined in DEP's Regulated Substances List, 2570-BK-DEP2724? If "Yes", list each Substance & its Capacity. **Note:** Applicant may need a Storage Tank Site Specific Installation Permit. ☐ Yes ☒ No  
22.0.1 Enter all substances & capacity of each; separate each set with semicolons.
- 23.0 Does your project involve installation of a storage tank at a new facility with a total AST capacity greater than 21,000 gallons? If "Yes", list each Substance & its Capacity. **Note:** Applicant may need a Storage Tank Site Specific Installation Permit. ☐ Yes ☒ No  
23.0.1 Enter all substances & capacity of each; separate each set with semicolons.
- 24.0 Will the intended activity involve the use of a radiation source? ☐ Yes ☒ No

### CERTIFICATION

I certify that I have the authority to submit this application on behalf of the applicant named herein and that the information provided in this application is true and correct to the best of my knowledge and information.

Type or Print Name Rex Boland

Rex H. Boland  
Signature

VP/GM of Allentown Operations

Title

11-21-19  
Date



COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF AIR QUALITY

## AIR POLLUTION CONTROL ACT COMPLIANCE REVIEW FORM

Fully and accurately provide the following information, as specified. Attach additional sheets as necessary.

### Type of Compliance Review Form Submittal (check all that apply)

- ☐ Original Filing  
☒ Amended Filing

Date of Last Compliance Review Form Filing:

11/08/2019

### Type of Submittal

- ☒ New Plan Approval ☐ New Operating Permit ☐ Renewal of Operating Permit  
☐ Extension of Plan Approval ☐ Change of Ownership ☐ Periodic Submission (@ 6 mos)  
☐ Other: \_\_\_\_\_

### SECTION A. GENERAL APPLICATION INFORMATION

Name of Applicant/Permittee/("applicant")  
(non-corporations-attach documentation of legal name)

*B. Braun Medical Inc.*

Address 901 Marcon Blvd.

Allentown, PA 18109

Telephone (610) 596-2584

Taxpayer ID# 23-211-6774

Permit, Plan Approval or Application ID# Title V Operating Permit No. 39-00055

Identify the form of management under which the applicant conducts its business (check appropriate box)

- ☐ Individual ☐ Syndicate ☐ Government Agency  
☐ Municipality ☐ Municipal Authority ☐ Joint Venture  
☐ Proprietorship ☐ Fictitious Name ☐ Association  
☐ Public Corporation ☐ Partnership ☐ Other Type of Business, specify below:  
☒ Private Corporation ☐ Limited Partnership

Describe below the type(s) of business activities performed.

*B. Braun Medical Inc. operates a medical instrument apparatus manufacturing facility.*

**SECTION B. GENERAL INFORMATION REGARDING "APPLICANT"**

If applicant is a corporation or a division or other unit of a corporation, provide the names, principal places of business, state of incorporation, and taxpayer ID numbers of all domestic and foreign parent corporations (including the ultimate parent corporation), and all domestic and foreign subsidiary corporations of the ultimate parent corporation with operations in Pennsylvania. Please include all corporate divisions or units, (whether incorporated or unincorporated) and privately held corporations. (A diagram of corporate relationships may be provided to illustrate corporate relationships.) Attach additional sheets as necessary.

Unit Name	Principal Places of Business	State of Incorporation	Taxpayer ID	Relationship to Applicant
<i>B. Braun of America Inc.</i>	<i>824 12<sup>th</sup> Ave. Bethlehem, PA 18018</i>	<i>PA</i>	<i>23-211-5335</i>	<i>100% Owner of Applicant</i>
<i>B. Braun Medical Inc.</i>	<i>824 12<sup>th</sup> Ave. Bethlehem, PA 18018</i>	<i>PA</i>	<i>23-211-6774</i>	<i>Applicant</i>

**SECTION C. SPECIFIC INFORMATION REGARDING APPLICANT AND ITS "RELATED PARTIES"**

Pennsylvania Facilities. List the name and location (mailing address, municipality, county), telephone number, and relationship to applicant (parent, subsidiary or general partner) of applicant and all Related Parties' places of business, and facilities in Pennsylvania. Attach additional sheets as necessary.

Unit Name	Street Address	County and Municipality	Telephone No.	Relationship to Applicant
<i>B. Braun Medical Inc.</i>	<i>824 12<sup>th</sup> Ave. Bethlehem, PA 18018 (Corporate Offices)</i>	<i>Lehigh and Hanover</i>	<i>(610) 691-5400</i>	<i>Applicant</i>
<i>B. Braun Medical Inc.</i>	<i>901 Marcon Blvd. Allentown, PA 18109 (Manufacturing Division)</i>	<i>Lehigh and Hanover</i>	<i>(610) 596-2584</i>	<i>Applicant</i>
<i>B. Braun Medical Inc.</i>	<i>939 Marcon Blvd. Allentown, PA 18109</i>	<i>Lehigh and Hanover</i>	<i>(610) 266-0500</i>	<i>Applicant</i>
<i>B. Braun Medical Inc.</i>	<i>200 Boulder Drive Breinigsville, PA 18031</i>	<i>Lehigh and Upper Macungie</i>	<i>(610) 336-9595</i>	<i>Applicant</i>
<i>B. Braun Medical Inc.</i>	<i>944 Marcon Blvd. Allentown, PA 18109</i>	<i>Lehigh and Hanover</i>	<i>(610) 596-2584</i>	<i>Applicant</i>
<i>B. Braun Medical Inc.</i>	<i>861 Marcon Blvd. Allentown, PA 18109</i>	<i>Lehigh and Hanover</i>	<i>(484) 241-6767</i>	<i>Applicant</i>
<i>B. Braun Medical Inc.</i>	<i>871 Marcon Blvd. Allentown, PA 18109</i>	<i>Lehigh and Hanover</i>	<i>(484) 241-6767</i>	<i>Applicant</i>

Provide the names and business addresses of all general partners of the applicant and parent and subsidiary corporations, if any.

Name	Business Address
<i>None</i>	

List the names and business address of persons with overall management responsibility for the process being permitted (i.e. plant manager).

Name	Business Address
<i>Rex Boland (VP/GM of Allentown Operations)</i>	<i>901 Marcon Blvd. Allentown PA, 18109</i>


**Plan Approvals or Operating Permits.** List all plan approvals or operating permits issued by the Department or an approved local air pollution control agency under the APCA to the applicant or related parties that are currently in effect or have been in effect at any time 5 years prior to the date on which this form is notarized. This list shall include the plan approval and operating permit numbers, locations, issuance and expiration dates. Attach additional sheets as necessary.

<b>Air Contamination Source</b>	<b>Plan Approval/ Operating Permit#</b>	<b>Location</b>	<b>Issuance Date</b>	<b>Expiration Date</b>
<i>Facility</i>	<i>TVOP No. 39-00055</i>	<i>901 Marcon Blvd. Allentown, PA 18109</i>	<i>08/31/2016</i>	<i>08/31/2021</i>
<i>Facility</i>	<i>Plan Approval No. 39-00055A</i>	<i>901 Marcon Blvd. Allentown, PA 18109</i>	<i>05/06/2019</i>	<i>10/31/2020</i>

**Compliance Background.** (Note: Copies of specific documents, if applicable, must be made available to the Department upon its request.) List all documented conduct of violations or enforcement actions identified by the Department pursuant to the APCA, regulations, terms and conditions of an operating permit or plan approval or order by applicant or any related party, using the following format grouped by source and location in reverse chronological order. Attach additional sheets as necessary. See the definition of "documented conduct" for further clarification. Unless specifically directed by the Department, deviations which have been previously reported to the Department in writing, relating to monitoring and reporting, need not be reported.

Date	Location	Plan Approval/ Operating Permit#	Nature of Documented Conduct	Type of Department Action	Status: Litigation Existing/Continuing or Corrected/Date	Dollar Amount Penalty
<i>None</i>						\$
						\$
						\$
						\$
						\$
						\$
						\$
						\$
						\$
						\$
						\$

List all incidents of deviations of the APCA, regulations, terms and conditions of an operating permit or plan approval or order by applicant or any related party, using the following format grouped by source and location in reverse chronological order. This list must include items both currently known and unknown to the Department. Attach additional sheets as necessary. See the definition of "deviations" for further clarification.

Date	Location	Plan Approval/ Operating Permit#	Nature of Deviation	Incident Status: Litigation Existing/Continuing Or Corrected/Date
<i>None</i>				

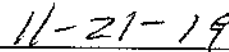
**CONTINUING OBLIGATION.** Applicant is under a continuing obligation to update this form using the Compliance Review Supplemental Form if any additional deviations occur between the date of submission and Department action on the application.

**VERIFICATION STATEMENT**

Subject to the penalties of Title 18 Pa.C.S. Section 4904 and 35 P.S. Section 4009(b)(2), I verify under penalty of law that I am authorized to make this verification on behalf of the Applicant/Permittee. I further verify that the information contained in this Compliance Review Form is true and complete to the best of my belief formed after reasonable inquiry. I further verify that reasonable procedures are in place to ensure that "documented conduct" and "deviations" as defined in 25 Pa Code Section 121.1 are identified and included in the information set forth in this Compliance Review Form.



Signature



Date

Rex Boland

Name (Print or Type)

VP/GM of Allentown Operations

Title

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## **APPENDIX B – EMISSIONS INVENTORY**

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Table 1  
B. Braun Medical Inc.  
Current Ethylene Oxide (EtO) Emissions from the Sterilization Units and Aeration Room

Source	EtO Throughput <sup>(e)</sup> (tons/yr)	Potential EtO Emissions (tons/yr)			
		Scrubber <sup>(b)</sup>	Catalytic Oxidizer <sup>(d)</sup>	Rear Chamber Exhaust <sup>(f)</sup>	Total
Source Group 1 <sup>(a)</sup>	196.74	1.95	0.48	1.55	3.97

<sup>(a)</sup> Source Group 1 consists of eight sterilization units (Source IDs 101 through 108) and the Aeration Room (Source ID 110). The primary exhaust of each sterilizer is controlled by a common wet scrubber. The Aeration Room is controlled by a catalytic oxidizer.

<sup>(b)</sup> Emissions rate from the wet scrubber is calculated using the following information:

Scrubber Control Efficiency:	99	% <sup>(c)</sup>
------------------------------	----	------------------

<sup>(c)</sup> As required by 40 CFR Part 63, Subpart O.

<sup>(d)</sup> Emissions rate from the catalytic oxidizer is calculated using the following information:

Maximum Catalytic Oxidizer EtO Exhaust Concentration:	1.0	ppm <sup>(c)</sup>
EtO Molecular Weight:	44	lb/lb-mol
EtO Throughput:	393,470	lb/year <sup>(e)</sup>
Catalytic Oxidizer Rated Capacity:	16,000	cfm

<sup>(e)</sup> Maximum throughput of EtO for all sterilization chambers based on total Facility-wide sterilization capacity of 77 pallets, 7 pounds of EtO consumed per pallet, and 2 batches per day. Maximum operation is 365 days per year.

<sup>(f)</sup> Rear chamber exhaust emissions rates calculated based on the following information:

Sterilizer EtO Concentration:	50	ppm <sup>(g)</sup>
Batch Venting Time:	30	min/batch
Number of Batches:	112	total batches/week <sup>(h)</sup>
Sterilizer Rear Chamber Exhaust Volume:	3,100	cfm

<sup>(g)</sup> Assumed average concentration for duration of venting time.

<sup>(h)</sup> Calculated based on 8 sterilizers, 2 batches per day, and 7 days per week.

Calculations assume the following:

Annual Operation:	365 days/yr
Pound to Ton Conversion:	2,000 lb/ton
Minute to Hour Conversion:	60 min/hr
Gas Conversion:	385.35 scf/lb-mol



Table 2  
B. Braun Medical Inc.  
Proposed Potential EtO Emissions from the Sterilization Units and Aeration Room

Source	EtO Throughput <sup>(d)</sup> (tons/yr)	Potential EtO Emissions (tons/yr)		
		Catalytic Oxidizer <sup>(b)</sup>	Rear Chamber Exhaust <sup>(e)</sup>	Total
Source Group 1 <sup>(a)</sup>	196.74	1.95	1.55	3.50

<sup>(a)</sup> Source Group 1 consists of 8 Sterilizers (Source IDs 101 through 108) and the Aeration Room (Source ID 110). B. Braun is proposing to vent exhaust from Source IDs 101 through 108 and 110 to one new catalytic oxidizer.

<sup>(b)</sup> Emissions rates from the proposed catalytic oxidizer controlling Source Group 1 are calculated using the following information:

Catalytic Oxidizer Control Efficiency:	99	% <sup>(c)</sup>
EtO Molecular Weight:	44	lb/lb-mol
EtO Throughput:	393,470	lb/year <sup>(d)</sup>

<sup>(c)</sup> Assumed control efficiency, which is expected to meet or exceed 99% based on information provided by the vendor (Anguil Environmental Systems, Inc.).

<sup>(d)</sup> Maximum throughput of EtO for all sterilization chambers based on total Facility-wide sterilization capacity of 77 pallets per batch, 7 pounds of EtO consumed per pallet, and 2 batches per day. Maximum operation is 365 days per year.

<sup>(e)</sup> Rear chamber exhaust emissions rates calculated using the following information:

Sterilizer EtO Concentration:	50	ppm <sup>(f)</sup>
Batch Time (Venting Time):	30	min/batch
Number of Batches:	112	total batches/week <sup>(g)</sup>
Sterilizer Rear Chamber Exhaust Volume:	3,100	cfm/sterilizer

<sup>(f)</sup> Assumed average concentration for duration of venting time.

<sup>(g)</sup> Calculated based on 8 sterilizers, 2 batches per day, and 7 days per week.

Calculations assume the following:

Annual Operation:	365 days/year
Pound to Ton Conversion:	2,000 lb/ton
Minute to Hour Conversion:	60 min/hr
Gas Conversion:	385.35 scf/lb-mol

Table 3  
B. Braun Medical Inc.  
Potential Combustion Emissions Increase from Natural Gas-Fired Burner<sup>(a)</sup>

Pollutant	Emissions Factor			Total Emissions (tpy)
	Value	Unit	Source	
NO <sub>x</sub>	100	lb/MMscf	(b)	0.09
CO	84	lb/MMscf	(b)	0.07
SO <sub>2</sub>	0.6	lb/MMscf	(b)	5.15E-04
VOC	5.5	lb/MMscf	(b)	4.72E-03
PM	1.9	lb/MMscf	(b)(c)	1.63E-03
PM <sub>2.5</sub>	7.6	lb/MMscf	(b)(c)	6.53E-03
PM <sub>10</sub>	7.6	lb/MMscf	(b)(c)	6.53E-03
Pb	5.00E-04	lb/MMscf	(b)	4.29E-07
CO <sub>2</sub>	53.06	kg/MMBtu	(d)	102
N <sub>2</sub> O	1.00E-04	kg/MMBtu	(d)	1.93E-04
CH <sub>4</sub>	1.00E-03	kg/MMBtu	(d)	1.93E-03
Maximum Individual HAP	--		(e)(f)	1.55E-03
Total HAP	--		(e)(f)	1.62E-03

<sup>(a)</sup> The proposed catalytic oxidizer to control EtO emissions from Source IDs 101 through 108 and 110 contains a 3.0 MMBtu/hr natural gas-fired burner. This will replace the 2.8 MMBtu/hr burner contained in existing Control Device C001 and will result in a 0.2 MMBtu/hr increase.

<sup>(b)</sup> Emissions factors obtained from U.S. EPA AP-42 Chapter 1, Section 4, Table 1.4-1 and Table 1.4-2.

<sup>(c)</sup> PM emissions factor is only filterable particulate. PM<sub>2.5</sub> and PM<sub>10</sub> emissions factors are both filterable and condensable particulate.

<sup>(d)</sup> Emissions factors obtained from 40 CFR Part 98, Subpart C, Table C-1 and Table C-2.

<sup>(e)</sup> Emissions factors obtained from U.S. EPA AP-42 Chapter 1, Section 4, Table 1.4-3 and Table 1.4-4.

<sup>(f)</sup> Individual HAP with insignificant emissions have not been included in this table but are included in the total HAP.

Table 4  
 B. Braun Medical Inc.  
 Project-Related EtO Emissions Increase - Sterilization Units and Aeration Room Control Device  
 Replacement

Existing Potential EtO Emissions (tons/yr) <sup>(a)</sup>	Proposed Potential EtO Emissions (tons/yr) <sup>(a)</sup>	Project Emissions Increase (tons/yr) <sup>(a)</sup>
3.97	3.50	-0.48

<sup>(a)</sup> EtO emissions contribute to volatile organic compound (VOC) emissions in addition to hazardous air pollutant (HAP) emissions.

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## **APPENDIX C – CONTROL DEVICE SPECIFICATION SHEET**

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# Anguil Environmental Systems, Inc.

## Catalytic Recuperative Oxidizer Proposal

**Date:** August 9<sup>th</sup>, 2019  
**Proposal #:** AES- 03828

**Prepared for:**

Erin Armstrong

B Braun  
901 Marcon Blvd  
Allentown, PA 18109

Email: [erin.armstrong@bbraunusa.com](mailto:erin.armstrong@bbraunusa.com)

**Submitted by:**

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# ANGUIL

Anguil Environmental Systems, Inc.  
8855 N 55th St Milwaukee, WI 53223  
Phone: 414-365-6400 | Fax: 414-365-6410  
[www.anguil.com](http://www.anguil.com)

Your single  
source for air  
and water  
pollution control  
systems.



## Environmental and Energy Solutions that Ensure Cleaner Air and Water for Future Generations.

Founded in 1978, Anguil Environmental Systems is a second generation family owned and operated environmental technology supplier headquartered in Milwaukee, WI USA with offices in Asia and Europe. With annual sales in excess of \$50 million globally, Anguil has been a trusted air and water solutions supplier for over 40 years.

### The Anguil Advantage

- Business stability and unparalleled expertise with over 40 years in business.
- Single source provider of fully integrated air and water pollution control systems for lowest cost of ownership.
- Over half of Anguil staff are degreed engineers.
- Regulatory compliance is guaranteed.
- Broad range of technology solutions ensure an unbiased equipment selection.
- Comprehensive Quality Assurance program and procedures.
- An established safety program with continuous training for Anguil field service engineers.
- Custom solutions developed specific to your application that maximize efficiency and minimize system life operation costs.



### AIR TECHNOLOGIES

**Air pollution control systems for VOC, HAP, and odor abatement—capable of 99+% destruction efficiency.**

- Regenerative thermal oxidizers (RTO)
- Catalytic, recuperative, and direct-fired thermal oxidizers and vapor combustors
- Emission concentrator systems



**Over 1,900 oxidizers installed on six continents in a wide variety of applications!**



### ENERGY RECOVERY

**Heat and energy recovery systems for improved efficiency and reduced operating costs.**

- Air-to-air heat exchangers
- Air-to-liquid heat exchangers
- Heat-to-power
- Energy evaluations



### WASTEWATER TREATMENT

**Wastewater treatment technologies for industrial and remediation applications.**

- Fully integrated and turnkey systems
- Single source provider
- Engineering assistance, rentals, and pilot programs available
- Technology agnostic approach
- Advanced instrumentation, controls, and automation



### AFTERMARKET & SERVICE

**Service and maintenance on any make or model, regardless of original manufacturer.**

- 24/7 emergency service response
- Operating cost reviews
- System upgrades and retrofits
- Spare parts and component packages
- Preventive Maintenance Evaluations



**Years in Clean Air and Water**



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## **Executive Summary**

### **1. Equipment Description**

B'Braun has requested a proposal for equipment to control emissions from their ethylene oxide sterilization operation. The emissions will be sent to a new Anguil Catalytic Recuperative Oxidizer where they will be oxidized and destroyed. Upon purification the clean Catox exhaust can be sent to atmosphere via an exhaust stack.

### **2. Facility to be Controlled**

A B'Braun Medical facility located in Allentown, PA

### **3. Processes Controlled**

Ethylene Oxide sterilizers and an aeration room

### **4. RTO Energy Recovery**

65% Nominal Thermal Energy Recovery to minimize gas usage

### **5. Proposed Equipment**

Model 150 (16,000 SCFM) Regenerative Thermal Oxidizer (RTO)

### **6. Anguil Benefits**

- \* Seamless integration with the current process
- \* Fully automated PLC based controls
- \* Ethernet communications for remote diagnostics
- \* Field Tested and proven technology
- \* Full equipment warranty
- \* Factory test prior to shipment
- \* 24-hour service support

### **7. Results**

\* Anguil guarantees an EtO conversion efficiency of 99.9% or an outlet concentration of 0.2 ppmv, whichever is less stringent. Testing method with suitable level of accuracy to be approved by Anguil.



## **Customer Process Specifications**

### **APPLICATION DATA AND DESIGN PARAMETERS**

- Process Producing Emissions: Ethylene Oxide Gas Filling / Sterilization
- Design Basis: Peak EtO Emission Rate of 9.6 lbs/min
- Aeration Room Flow: 15,000 SCFM (0-200 ppmv of EtO)  
Sterilizer Flow: 800 SCFM (9.6 lbs/min)  
TOTAL 15,800 SCFM
- VOCs: Ethylene Oxide (EtO)
- Oxidizer Location: Outdoors in general electrical classification area
- Main Control Panel Location: Mounted indoors within 50' of oxidizer in a temperature controlled environment (85°F)
- Available Fuel: Natural Gas
- Available Power: 460V / 60Hz / 3 Ph

### **DESIRED RESULTS**

- Process emission compliance with the local regulatory agency by achieving an EtO destruction efficiency of **99.9%** or an outlet of 0.2 ppmv, whichever is less stringent
- Keep the overall cost of the project to a minimum
- Minimize yearly operational cost of the system
- Create no adverse effects on the operation of the current process

### **EQUIPMENT RECOMMENDATION**

- One (1) Anguil Model 150 Catalytic Recuperative Oxidizer

### **EQUIPMENT BENEFITS**

- 65% effective integral heat exchanger to minimize operating costs
- Fully automated PLC based control system
- VPN for remote diagnostics
- Induced draft system fan will produce a negative pressure within the oxidizer, **ensuring zero leakage of EtO** from the oxidizer
- Variable Frequency Drive (VFD) to control system fan reduces operating costs
- Field tested and proven technology
- Full equipment warranty
- Short start-up and cool down periods
- Oxidizer is factory test prior to shipment
- 24 hour service support

## **Design Specifications**

### **Size and Weight**

- Maximum Airflow: 16,000 SCFM
- Approximate Footprint / Weight: 44' x 21' / 35,000 lbs
- Preliminary Foundation Size: 48' x 24'
- Stack Height / Diameter: **Not Included at this Time**
- Oxidizer Control Panel Location: Indoors within 50' of oxidizer

### **Utilities Required**

- Fuel Requirements: 5.0 MMBTU/hr at 5 psig
- Electrical Power: 460V / 60 Hz / 3 Ph

### **Operation Information**

- VOC Destruction Efficiency: 99.9% or an outlet concentration of 0.2 ppmv, whichever is less stringent, per an agreed upon EPA test method.
- Nominal Thermal Efficiency (TE): 65%
- System Process Fan Draft Design: Induced
- System Process Fan HP: 200 HP
- Combustion Fan HP: 5 HP

## **Ethylene Oxide Peak Shaver Equipment Specifications**

### **SYSTEM DISCUSSION**

The proposed peak shaver system has been sized for the maximum ventilation volume provided. The buffer tank and recirculation water rate has been sized to accommodate the vented EtO prior to stripping the EtO.

The proposed system consists of a vertical packed tower scrubber, buffer tank, exhaust fan. Interconnecting ductwork has not been included at this time. All ladders and platforms shall be provided by others, from drawings supplied by Anguil.

### **VERTICAL PACKED TOWER SCRUBBER**

The proposed scrubber / stripper will be a vertical packed column with a packing height approximately 17'. A recirculation pump with manual isolation valves will be provided with the recirculation piping. The scrubber will have a bed of packing and an entrainment separator section consisting of a composite mesh pad. The pressure drop across the scrubber/stripper unit is approximately 4.5" wc.

- All FRP equipment shall be fabricated Product Standard PS-1569.
- Standard Anguil gray topcoat with UV inhibitor
- The design pressure shall be -12" W.C. vacuum to +12" W.C. pressure
- Design temperature 180oF max
- Self-supporting up to 90 mph wind load
- Composite mesh pad mist eliminator
- CPVC nozzles for liquid distribution
- High efficiency polypropylene packing
- Two (2) packing access doors
- Open bottom / body flange for connection to the buffer tank
- Recycle piping to be CPVC

Material of construction for the scrubber will be FRP, Quacorr or Hetron 800 furan resin reinforced with approximately 25% glass. The spray nozzle and packing will be constructed of polypropylene.

### **BUFFER TANK**

The buffer tank will be of sufficient volume to absorb the EtO from the sterilizers at the rate provided by BBraun. The buffer tank will be cleaned of EtO over the next 8 hours before the next sterilizer chamber cycle begins. The tank shall have a 24" diameter flanged manway, a mounting flange for the scrubber. Material of construction for the sump tank shall be FRP, Quacorr or Hetron 800 furan resin reinforced with approximately 25% glass.



**PEAK SHAVER FAN (Balancer)**

The proposed fan will be a centrifugal type, having an impeller rated at approximately 800 ACFM and 8" W.C. All parts in contact with the airstream are constructed of stainless steel. The fan shall be Type C spark resistant. All metal parts are protected against corrosion. The fan will be statically and dynamically balanced at operating speed prior to shipment. The fan is mounted approximately 20' above grade on a platform provided by others.

**INTERCONNECTING DUCTWORK – Peak Shaver to Peak Shaver Fan**

The proposed ductwork will connect the scrubber gas outlet to the peak shaver fan inlet. The ductwork is based on the fan being mounted 20' above grade (platform and ladder provided by others) and not more than 5' laterally from the scrubber. The ductwork will be shipped loose for field installation by others. Material of construction for the proposed ductwork will be vinyl ester resin reinforced with approximately 25% glass. The ductwork does not include flex connectors.

**INTERCONNECTING DUCTWORK – Peak Shaver Fan to Catalytic Oxidizer**

The ductwork that will connect the peak shaver fan outlet to the oxidizer will be provided as part of installation.

## **Catalytic Oxidizer Equipment Specifications**

One Anguil Model 150 Catalytic Oxidizer will process the VOC laden air, providing the required destruction efficiency of EtO.

During system operation, EtO shall be exhausted to the catalytic oxidizer. The **induced draft system fan** shall draw the air into the primary heat exchanger where it shall be preheated. The EtO laden air will then move through the burner section and will be heated to the preset catalyst inlet temperature. When the EtO laden air passes through the catalyst an exothermic reaction will take place. The hot purified air will then pass through the opposite side of the heat exchanger where it will preheat the incoming air. The purified air is then drawn into the induced draft system fan and delivered to the exhaust stack.



The equipment will be assembled and supplied per the following specifications:

### **REACTOR**

- 304L stainless steel interior reactor shell
- Aluminized steel exterior reactor shell
- High density mineral wool placed between reactor shells
- Exterior shell painted with 2 coats of UV resistant polyurethane paint
- Access door allows for service and inspection of interior catalyst and reactor.

### **OXIDIZER SYSTEM FAN**

- Induced draft to prevent EtO leakage to atmosphere
- Sized to overcome the pressure drop through the oxidizer
- 460V / 60Hz / 3Ph TEFC (Totally Enclosed Fan Cooled) premium efficiency motor direct drive fan
- Fresh air damper allows for oxidizer to be brought up to catalyst ready temperature on outside air. The system heats up with 25% of the system's flow capacity.
- Fresh air damper also used to control the temperature of the oxidizer by regulating the amount of dilution air entering the oxidizer

### **VARIABLE FREQUENCY DRIVE**

- Allen Bradley or equal Variable Frequency Drive (VFD) to regulate airflow through the system
- VFD controlled by a pressure transmitter located up-stream of the oxidizer
- Provides maximum turn-down ratio of 5:1
- Combination of VFD and TEFC motor can result in a 50% energy savings as compared to an inlet vane damper and a standard efficiency motor



**BURNER/GAS TRAIN**

- Fuel source – Natural gas
- 20:1 maximum turndown
- Mixing plates assures proper temperature distribution
- Burner mounted in horizontal plane to allow the flame to fire in the same direction as the airflow
- Burner selected to bring reactor up to catalyst-ready temperature with ambient air during start-up
- Burner will have capacity to maintain system operating temperature during VOC free, full air flow conditions
- Expected system heat up time from cold start is 25-30 minutes

**HEAT EXCHANGER**

- 65% nominal efficiency (higher efficiency available with plate exchanger)
- Shell and tube type design
- 304L stainless steel construction
- Continuously seam welded
- Leak testing assures no cross contamination
- EtO laden air will pass through the tube side, hot purified air will pass through the shell side
- Equipped with automatic heat exchanger bypass damper for over-temperature protection

**CATALYST**

The catalyst shall conform to the following specifications to achieve the required EtO destruction efficiency. Catalyst cannot be exposed to sulfur emissions.

- |                            |                            |
|----------------------------|----------------------------|
| • Manufacturer:            | Carus Chemical or Clariant |
| • Type:                    | Carulite 500 or equal      |
| • Destruction Efficiency:  | 99.9%                      |
| • Composition:             | Iron / Manganese           |
| • Geometry:                | Granular                   |
| • Density:                 | 62 lbs/ ft <sup>3</sup>    |
| • Min. inlet temperature:  | 320°F                      |
| • Max. outlet temperature: | 735°F                      |

**EXHAUST STACK (NOT INCLUDED)**

It is understood the exhaust stack is to be by others, or that an existing stack shall be reused. Therefore, no exhaust stack is included at this time.

Anguil would be happy to provide a quote for an exhaust stack upon request.

## SYSTEM CONTROLS

The system controls are located in a NEMA 12 control panel enclosure. In the event of a system shutdown, the touch screen will indicate the cause of the shutdown via a digital message in English.

- NEMA 12 control panel enclosure to be mounted in a temperature-controlled environment (85°F)
- Allen Bradley Logix family PLC (Programmable Logic Controller) controls
- Safety PLC for burner management allows for easier troubleshooting with better diagnostic and status information on the HMI
- Allen Bradley 10" Color" Touchscreen HMI
- Digital chart recorder: data record of combustion chamber temperature and cold face temperatures.
- Ethernet communications for remote diagnostics and service support



## SAFETY SHUTDOWNS

- Loss of proper airflow
- Loss of electrical power
- Loss of gas pressure
- High catalyst outlet temperature
- Low catalyst inlet temperature

## START-UP AND TRAINING SERVICES

- Service technician will be provided to start-up and balance the oxidizer
- Operator training will be conducted during start-up
- Any delays outside of the control of Anguil will be charge at our standard daily rate

## OPERATION & MAINTENANCE MANUALS

- Anguil to provide a link to the Operation and Maintenance manual, available for electronic download. Paper hard copies available by request only.
- USB flash drive of all vendor bulletins

## FINAL ASSEMBLY AND SHOP TEST

- Temporary assembly of complete oxidizer system
- Starting of burner
- Control checkout
- Run electrical conduit
- Customer is invited to witness shop testing

## **Exceptions and Clarifications to the Specifications**

All items, components, and equipment proposed within this document are Anguil standard unless indicated otherwise. Any customer specifications that may alter the included device selections are not included at this time.

## **Items Not Included**

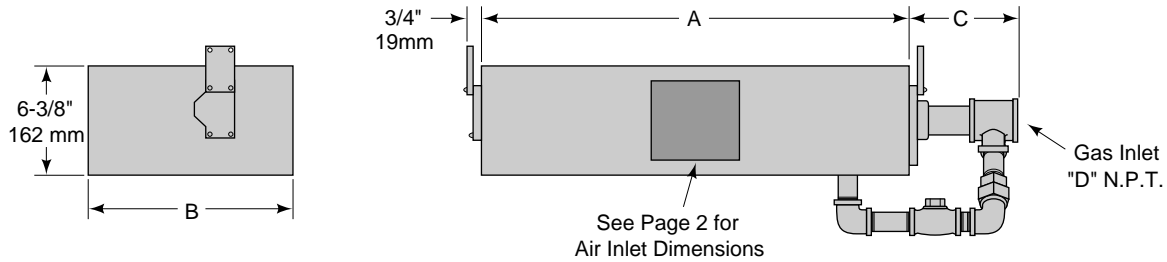
- Concrete pad / platform
- Any required soil testing
- Dumpster
- Interconnecting wiring between control panel and process equipment / Isolation dampers
- All natural gas piping to fuel train
- Power source to control panel
- Water supply for peak shaver
- Peak shaver winterization
- Ductwork from gas filling to oxidizer inlet
- Insulation of ductwork, fan and exhaust stack
- Personnel protection, security fencing and lighting
- Moving of oxidizer obstructions, fencing, landscaping, etc.
- Multiple installation trips if delays beyond Anguil's control
- All roof and building penetrations, if required
- All fire suppression piping and controls, if required
- All required sound abatement equipment, if required
- Compliance testing
- VPN connection to modem
- Taxes, permits
- Overtime, holiday or weekend work
- Mechanical and electrical installation (Can be quoted as an option)
- Installation supervision (quoted as a daily rate)

\*Note: All weights, dimensions, horsepower ratings, burner sizing, and specific engineering details within the proposal are approximate and will be confirmed by Anguil Environmental following order placement.



# AirHeat Burners

## Dimensions – Series "RAH"



U.S. Reissue Pat. No. 26,244  
Canadian Pat. No. 743,782

## English Units

Burner Cat. No.	Assy. No.	Total Input (MM Btu/Hr.)		Blower Cat. No.*	Dimensions In Inches				Cross Sect. Area Sq. In.	Approx. Ship Wt. Lbs.
		0.8 MM Btu/Ft.	1.0 MM Btu/Ft.		A	B	C	D		
40 RAH	109036	0.4	0.5	54-54S-1/3	6-1/8	10-9/16	9-3/8	2	39	49
80 RAH	109269	0.8	1.0	54-54S-1/3	12-1/8	10-9/16	9-3/8	2	77	63
120 RAH	109270	1.2	1.5	54-54S-1/3	18-1/8	10-9/16	9-1/2	2	116	77
160 RAH	109271	1.6	2.0	65-84S-1/3	24-1/8	12-5/16	9-1/2	2	154	91
200 RAH	109272	2.0	2.5	66-94S-3/4	30-1/8	12-5/16	9-1/2	2	192	105
240 RAH	109273	2.4	3.0	66-94S-3/4	36-1/8	12-5/16	9-1/2	2	230	126
280 RAH	109274	2.8	3.5	66-94S-3/4	42-1/8	12-5/16	9-7/8	2	269	144
320 RAH	109275	3.2	4.0	66-94S-1	48-1/8	12-5/16	9-7/8	2	307	172
360 RAH	109276	3.6	4.5	67-115S-1-1/2	54-1/8	15-13/16	9-7/8	2	345	180
400 RAH	109277	4.0	5.0	67-115S-1-1/2	60-1/8	15-13/16	9-7/8	2	383	204
440 RAH	109278	4.4	5.5	67-115S-1-1/2	66-1/8	15-13/16	10-1/2	3	422	222
480 RAH	109279	4.8	6.0	67-115S-1-1/2	72-1/8	15-13/16	10-1/2	3	460	258
520 RAH	109280	5.2	6.5	67-115S-2	78-1/8	15-13/16	10-1/2	3	498	300
560 RAH	109281	5.6	7.0	67-115S-2	84-1/8	15-13/16	10-1/2	3	536	324
600 RAH	109282	6.0	7.5	67-115S-2	90-1/8	15-13/16	11	3	575	360
640 RAH	109283	6.4	8.0	67-115S-2	96-1/8	15-13/16	11	3	613	372

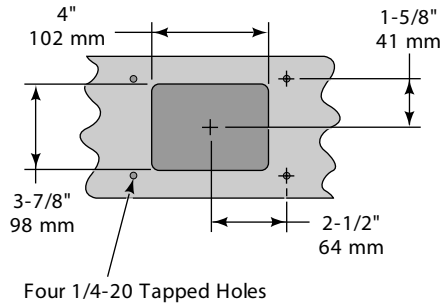
## Metric Units

Burner Cat. No.	Assy. No.	Total Input kW		Blower Cat. No.*	Dimensions In Millimeters				Cross Sect. Area Sq. Cm.	Approx. Ship Wt. Kgs.
		769 kW/M	962 kW/M		A	B	C	D		
40 RAH	109036	117	147	54-54S-1/3	156	268	238	2"	252	22
80 RAH	109269	234	293	54-54S-1/3	308	268	238	2"	497	29
120 RAH	109270	352	440	54-54S-1/3	460	268	241	2"	748	35
160 RAH	109271	469	586	65-84S-1/3	613	313	241	2"	994	41
200 RAH	109272	586	733	66-94S-3/4	765	313	241	2"	1239	48
240 RAH	109273	703	879	66-94S-3/4	918	313	241	2"	1484	57
280 RAH	109274	821	1026	66-94S-3/4	1070	313	251	2"	1736	65
320 RAH	109275	938	1172	66-94S-1	1222	313	251	2"	1981	78
360 RAH	109276	1055	1319	67-115S-1-1/2	1375	402	251	2"	2226	82
400 RAH	109277	1172	1466	67-115S-1-1/2	1527	402	251	2"	2471	93
440 RAH	109278	1290	1612	67-115S-1-1/2	1680	402	267	3"	2723	101
480 RAH	109279	1407	1759	67-115S-1-1/2	1832	402	267	3"	2968	117
520 RAH	109280	1524	1905	67-115S-2	1984	402	267	3"	3213	136
560 RAH	109281	1641	2052	67-115S-2	2137	402	267	3"	3458	147
600 RAH	109282	1759	2198	67-115S-2	2289	402	279	3"	3710	163
640 RAH	109283	1876	2345	67-115S-2	2442	402	279	3"	3955	169

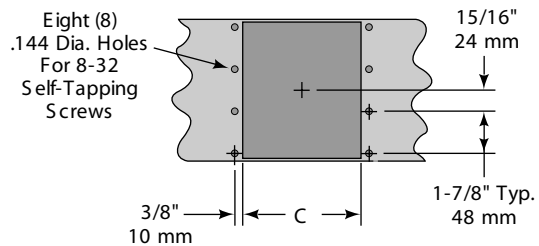
\*Blowers listed are satisfactory for duct pressures from -0.5" w.c. to +0.2" w.c. (-1.2 mbar to +0.5 mbar). For other conditions, see Data 140-5 for blower details and sizing.

## Air Inlet Dimensions

### 40, 80 & 120 RAH

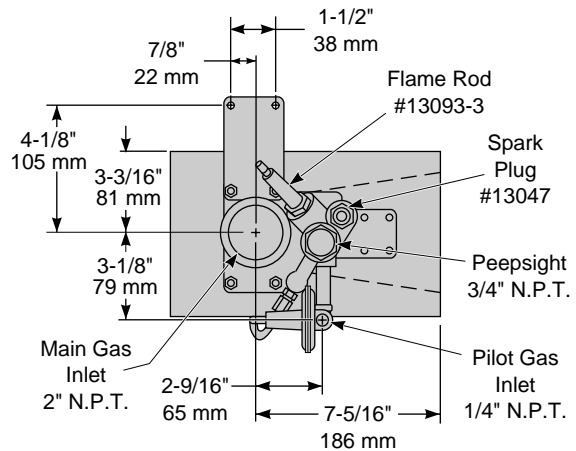
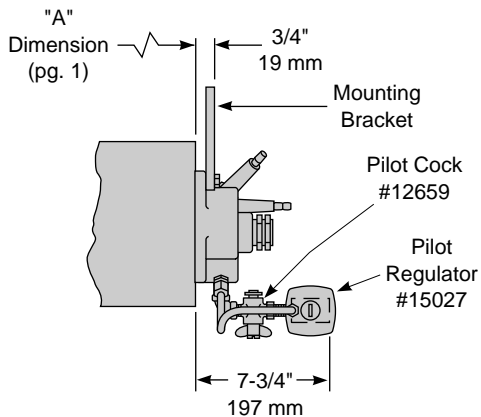


### 160 thru 640 RAH



Burner Cat. No.	Dimension "C"	
	Inches	mm
40 RAH	6	152
160 RAH	6	152
200 RAH	7 1/2	191
240 RAH	9	229
280 RAH	10-1/2	267
320 RAH	12	305
360 RAH	13-1/2	343
400 RAH	15	381
440 RAH	16-1/2	419
480 RAH	18	457
520 RAH	19-1/2	495
560 RAH	21	533
600 RAH	22-1/2	572
640 RAH	24	610

## Pilot Components & Dimensions



## Check Valve Assembly Numbers

Burner	Assy.	N.P.T.
40 & 80 RAH	550088	1/2"
120 & 160 RAH	550092	3/4"
200 & 240 RAH	550096	1"
280 thru 400 RAH	550100	1-1/4"
440 thru 640 RAH	550104	1-1/2"

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**Eclipse Combustion**  
www.eclipsenet.com

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## **APPENDIX D – MUNICIPAL NOTIFICATION LETTERS**

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November 19, 2019

**CERTIFIED MAIL**

Amy L. Zanelli – District 3  
Lehigh County Board of Commissioners  
17 South 7<sup>th</sup> Street  
Allentown, PA 18101-2400

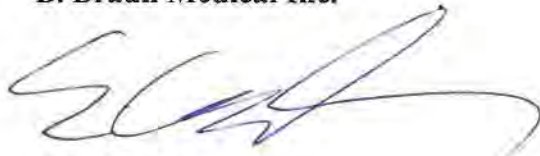
**RE: PADEP Required County Notification – Plan Approval Application  
Submitted**

Dear Ms. Zanelli:

Pursuant to 25 Pa. Code §127.43a, B. Braun Medical Inc. (B. Braun) hereby notifies Lehigh County of B. Braun's submittal of a Plan Approval Application (PAA) to the Pennsylvania Department of Environmental Protection (PADEP). B. Braun owns and operates a medical instrument manufacturing facility at 901 Marcon Blvd. Allentown, PA (Facility). B. Braun is submitting the PAA to seek air quality permitting approval to replace existing emission control devices at the Facility with an even more effective emission control device.

PADEP will accept comments on the PAA during a 30-day period, which begins upon your receipt of this notification. A copy of the PAA is available for your review at PADEP's Northeast Regional Office in Wilkes-Barre, Pennsylvania. Any comments concerning the PAA should be transmitted to PADEP within 30 days of your receipt of this letter. If you have any questions or concerns regarding the above information, please contact me at (484) 240-8817.

Sincerely,  
**B. Braun Medical Inc.**

A handwritten signature in blue ink, appearing to read 'EG', is written over a faint, larger signature in black ink.

Eric Geder  
EHS&S Manager



November 19, 2019

**CERTIFIED MAIL**

Bruce Paulus, Chairman of Council  
Hanover Township  
2202 Grove Road  
Allentown, PA 18109

**RE: PADEP Required Municipal Notification – Plan Approval Application  
Submitted**

Dear Mr. Paulus:

Pursuant to 25 Pa. Code §127.43a, B. Braun Medical Inc. (B. Braun) hereby notifies Lehigh County of B. Braun's submittal of a Plan Approval Application (PAA) to the Pennsylvania Department of Environmental Protection (PADEP). B. Braun owns and operates a medical instrument manufacturing facility at 901 Marcon Blvd. Allentown, PA (Facility). B. Braun is submitting the PAA to seek air quality permitting approval to replace existing emission control devices at the Facility with an even more effective emission control device.

PADEP will accept comments on the PAA during a 30-day period, which begins upon your receipt of this notification. A copy of the PAA is available for your review at PADEP's Northeast Regional Office in Wilkes-Barre, Pennsylvania. Any comments concerning the PAA should be transmitted to PADEP within 30 days of your receipt of this letter. If you have any questions or concerns regarding the above information, please contact me at (484) 240-8817.

Sincerely,  
**B. Braun Medical Inc.**

Eric Geder  
EHS&S Manager



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<input type="checkbox"/> Return Receipt (electronic)	\$
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<input type="checkbox"/> Adult Signature Required	\$
<input type="checkbox"/> Adult Signature Restricted Delivery	\$

Postage  
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Sent To Bruce Paulus, Chairman of Council

Street and Hanover Township

City, State, 2202 Grove Road

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<input type="checkbox"/> Return Receipt (electronic)	\$
<input checked="" type="checkbox"/> Certified Mail Restricted Delivery	\$
<input type="checkbox"/> Adult Signature Required	\$
<input type="checkbox"/> Adult Signature Restricted Delivery	\$

Postage  
\$

Total Postage and Fees  
\$

Sent To Amy L. Zane-District 3

Street Lehigh County Board of Commissioners

City, 17 South 7<sup>th</sup> Street

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